



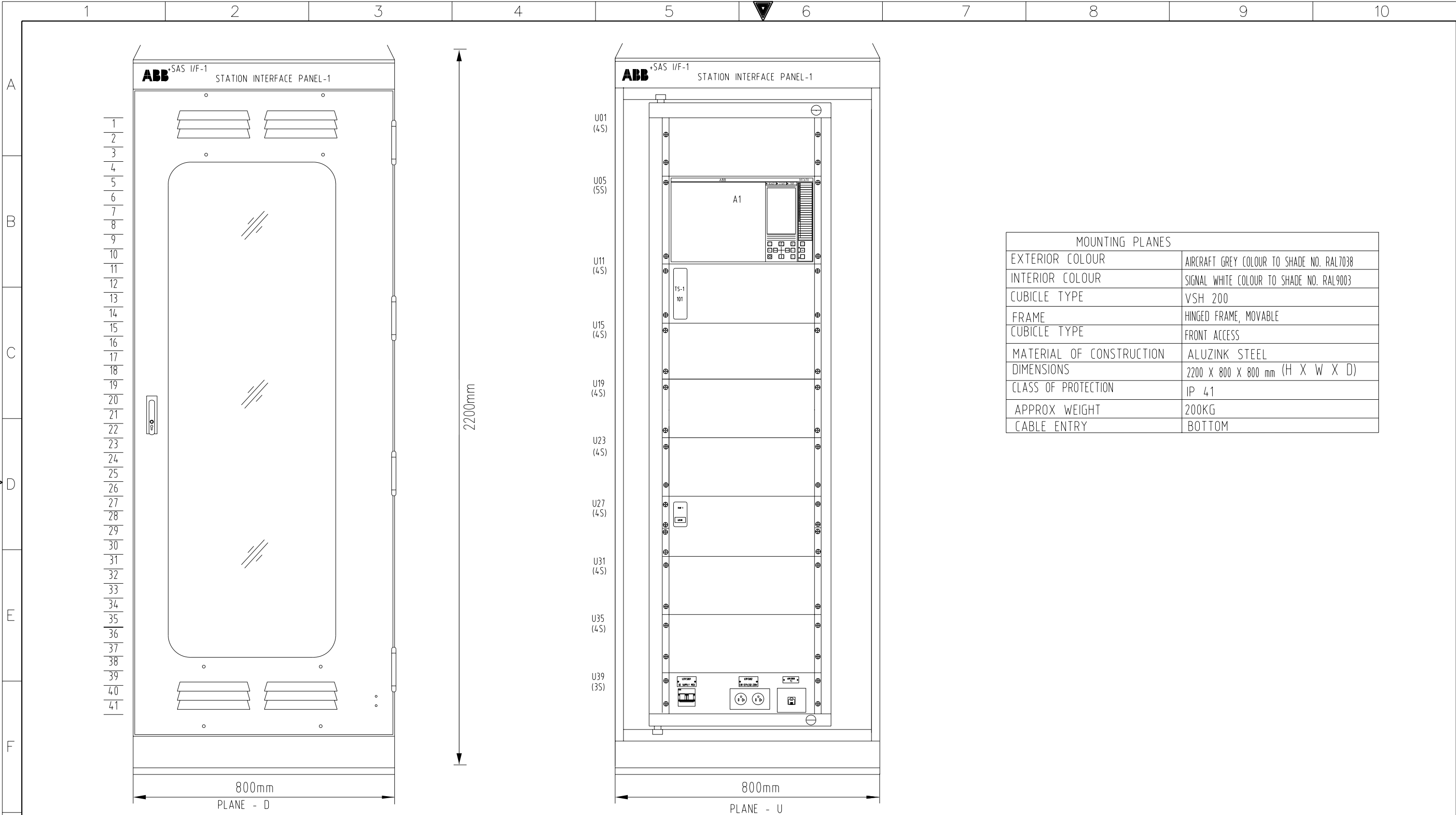


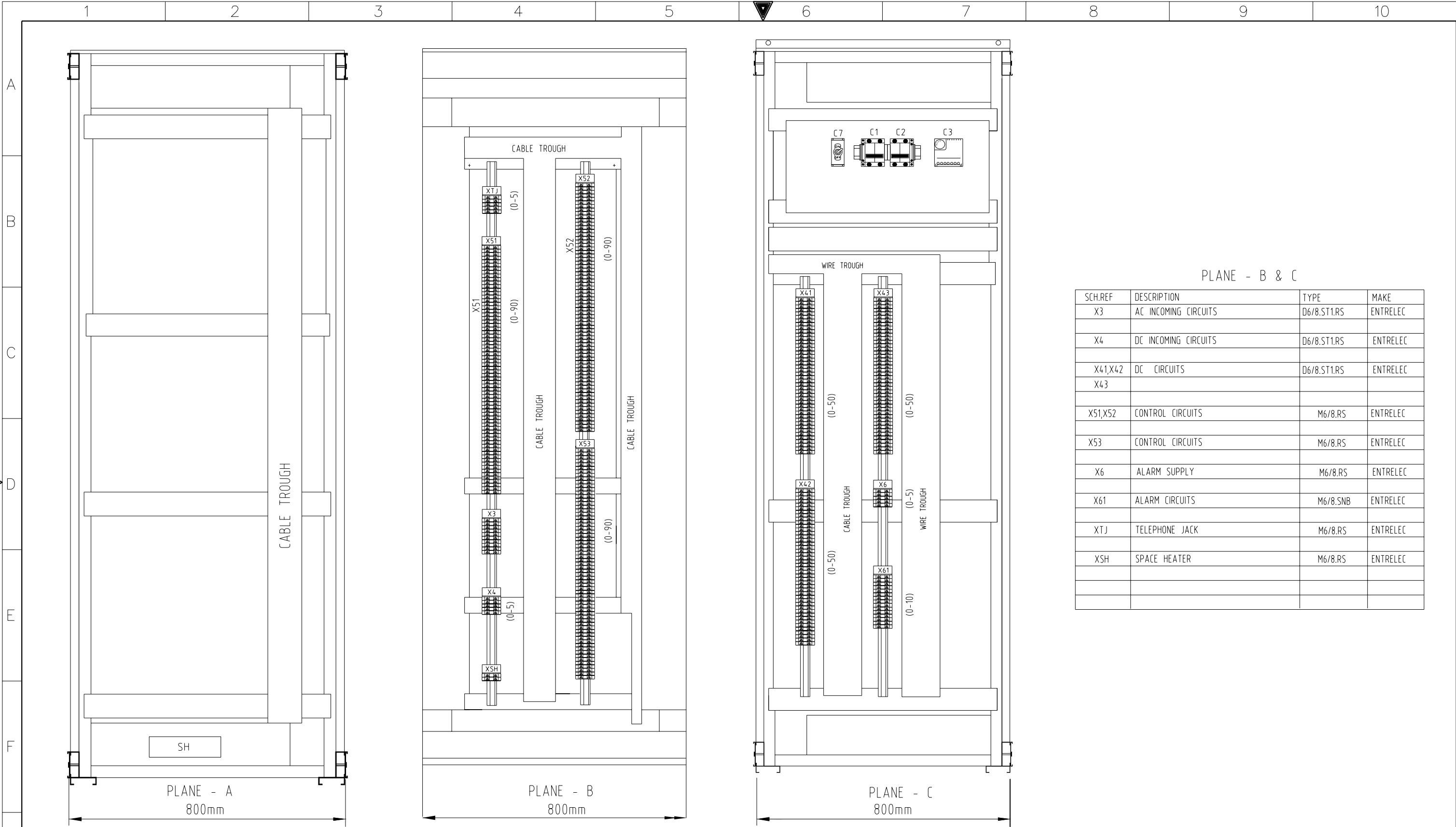
	1	2	3	4	5	6	7	8	9	10																																																																								
A			POWER SYSTEMS NETWORK MANAGEMENT PROTECTION AND SUBSTATION AUTOMATION SYSTEMS WBS NO: S-13656					ABB AUTOMATION COMPANY LTD., 414, AL-KHARJ ROAD SECOND INDUSTRIAL CITY RIYADH-11383 K.S.A																																																																										
B																																																																																		
C																																																																																		
D	CONTRACTOR : ABB Contracting Company																																																																																	
	CLIENT : National Grid sa																																																																																	
	PROJECT : CONSTRUCTION OF NEW 132/13.8kV SS 8709 IN AL-KHARJ CITY																																																																																	
	SUBSTATION : S/S 8709																																																																																	
E	CONTRACT NO. : 11131113/00																																																																																	
	TITLE : Assembly Drawing - +SAS I/F-1																																																																																	
F																																																																																		
G	<table><tr><td colspan="3">AS-BUILT BY _____ DATE _____</td><td colspan="2">CONTRACT NO. 11131113/00</td><td colspan="2">JOB ORDER NO. S-13656</td><td colspan="3">COVER SHEET</td><td colspan="2"> نقل الكهرباء الشركة الوطنية لنقل الكهرباء National Grid sa</td></tr><tr><td colspan="3"></td><td colspan="2">DRAWN BY <u>RIZ</u> CHECKED BY <u>JKR</u></td><td colspan="3">SAS INTERFACE PANEL +SAS I/F-1</td><td colspan="2"></td><td colspan="2"></td></tr><tr><td colspan="3"></td><td colspan="2">DATE STARTED <u>15.3.2013</u> DATE COMPLETED _____</td><td colspan="3">S/S 8709 S-13656</td><td colspan="2">INDEX PLANT NO. DRAWING NUMBER</td><td colspan="2">SHEET NO. REV. NO.</td></tr><tr><td colspan="3"></td><td colspan="2">OPRG. DEPT. <u>CTPD</u> ENG. DEPT. <u>AUT-PSAC</u></td><td colspan="3">RIYADH SAUDI ARABIA</td><td colspan="2">P C421 CD-322985</td><td colspan="2">G00 G01 00</td></tr><tr><td colspan="3">REV. NO. DATE DESCRIPTION</td><td colspan="2"></td><td colspan="3"></td><td colspan="2"></td><td colspan="2"></td></tr><tr><td colspan="3">00 13 20 FOR APPROVAL</td><td colspan="2"></td><td colspan="3"></td><td colspan="2"></td><td colspan="2"></td></tr></table>										AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		COVER SHEET			 نقل الكهرباء الشركة الوطنية لنقل الكهرباء National Grid sa					DRAWN BY <u>RIZ</u> CHECKED BY <u>JKR</u>		SAS INTERFACE PANEL +SAS I/F-1										DATE STARTED <u>15.3.2013</u> DATE COMPLETED _____		S/S 8709 S-13656			INDEX PLANT NO. DRAWING NUMBER		SHEET NO. REV. NO.					OPRG. DEPT. <u>CTPD</u> ENG. DEPT. <u>AUT-PSAC</u>		RIYADH SAUDI ARABIA			P C421 CD-322985		G00 G01 00		REV. NO. DATE DESCRIPTION												00 13 20 FOR APPROVAL											
AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		COVER SHEET			 نقل الكهرباء الشركة الوطنية لنقل الكهرباء National Grid sa																																																																								
			DRAWN BY <u>RIZ</u> CHECKED BY <u>JKR</u>		SAS INTERFACE PANEL +SAS I/F-1																																																																													
			DATE STARTED <u>15.3.2013</u> DATE COMPLETED _____		S/S 8709 S-13656			INDEX PLANT NO. DRAWING NUMBER		SHEET NO. REV. NO.																																																																								
			OPRG. DEPT. <u>CTPD</u> ENG. DEPT. <u>AUT-PSAC</u>		RIYADH SAUDI ARABIA			P C421 CD-322985		G00 G01 00																																																																								
REV. NO. DATE DESCRIPTION																																																																																		
00 13 20 FOR APPROVAL																																																																																		



AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		ASSEMBLY DRAWING		<div>الشركة الوطنية لنقل الكهرباء</div> <div>نقل الكهرباء</div> <div>National Grid sa</div>					
			DRAWN BY <u>RIZ</u> CHECKED BY <u>JKR</u>		DATE STARTED <u>15.3.2013</u> DATE COMPLETED _____		SAS INTERFACE PANEL +SAS I/F-1		INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.		REV. NO.
00	13 20	FOR APPROVAL	OPRG. DEPT. <u>CTPD</u> ENG. DEPT. <u>AUT-PSAC</u>		S/S 8709		S-13656					SHT	CONT.	
REV. NO.	DATE	DESCRIPTION			RIYADH		SAUDI ARABIA					G01	G02	

NG/D2-D (2012/01)

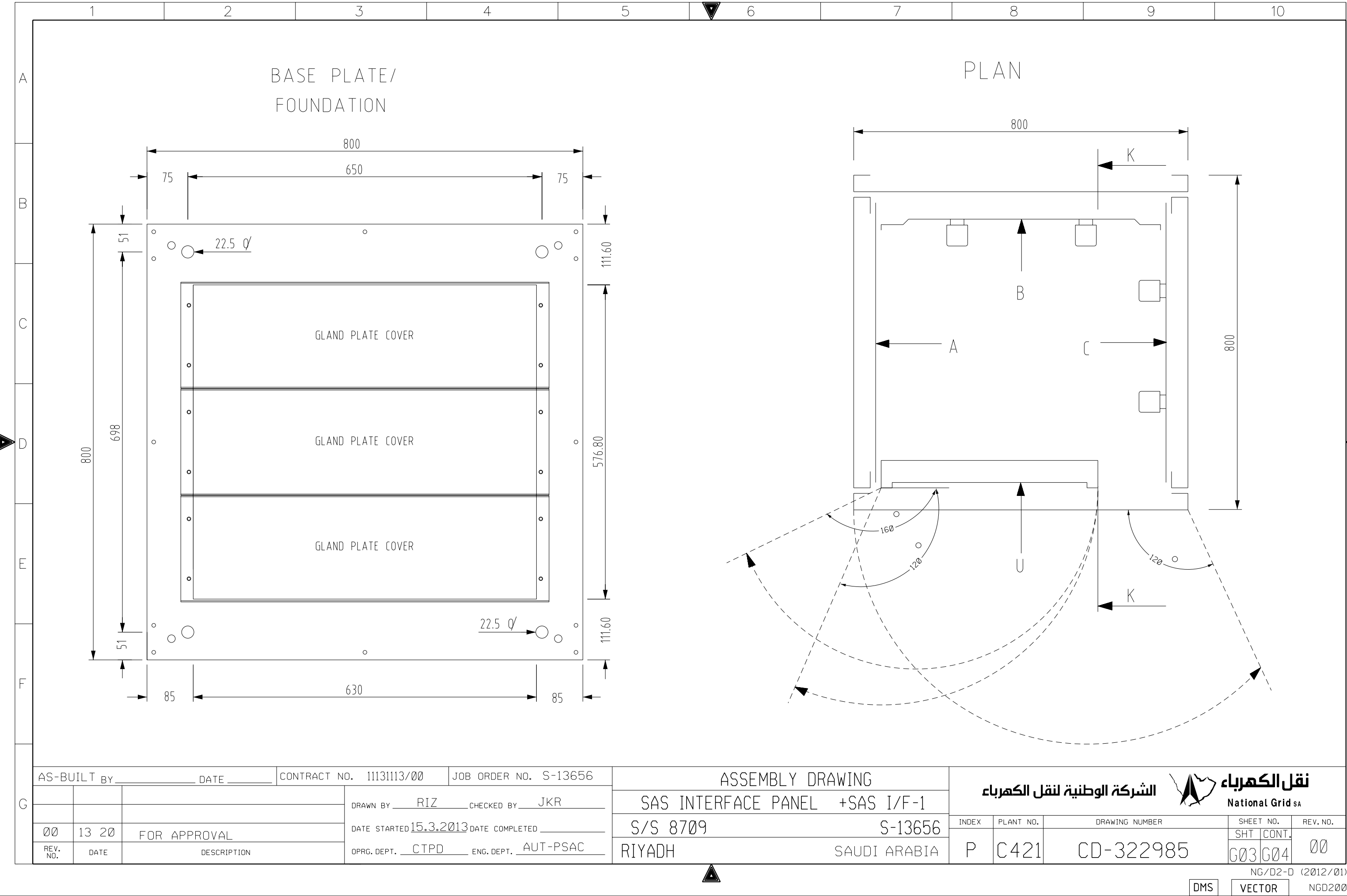
DMS VECTOR NGD200



PLANE - B & C

SCH.REF	DESCRIPTION	TYPE	MAKE
X3	AC INCOMING CIRCUITS	D6/8.ST1.RS	ENTRELEC
X4	DC INCOMING CIRCUITS	D6/8.ST1.RS	ENTRELEC
X41,X42 X43	DC CIRCUITS	D6/8.ST1.RS	ENTRELEC
X51,X52	CONTROL CIRCUITS	M6/8.RS	ENTRELEC
X53	CONTROL CIRCUITS	M6/8.RS	ENTRELEC
X6	ALARM SUPPLY	M6/8.RS	ENTRELEC
X61	ALARM CIRCUITS	M6/8.SNB	ENTRELEC
XTJ	TELEPHONE JACK	M6/8.RS	ENTRELEC
XSH	SPACE HEATER	M6/8.RS	ENTRELEC

G	AS-BUILT BY _____ DATE _____		CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		ASSEMBLY DRAWING		<div>الشركة الوطنية لنقل الكهرباء</div> <div>نقل الكهرباء</div> <div>National Grid sa</div>					
				DRAWN BY RIZ		CHECKED BY JKR		SAS INTERFACE PANEL +SAS I/F-1						
				DATE STARTED 15.3.2013		DATE COMPLETED _____		S/S 8709						
	00	13 20	FOR APPROVAL		OPRG. DEPT. CTPD		ENG. DEPT. AUT-PSAC		S-13656					
	REV. NO.	DATE	DESCRIPTION		RIYADH		SAUDI ARABIA		INDEX	PLANT NO.	DRAWING NUMBER		SHEET NO.	
								P	C421	CD-322985		SHT CONT.		00
										G02	G03			



1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

A

B

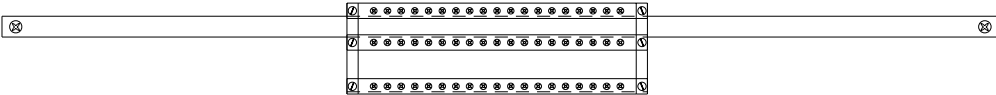
C

D

E

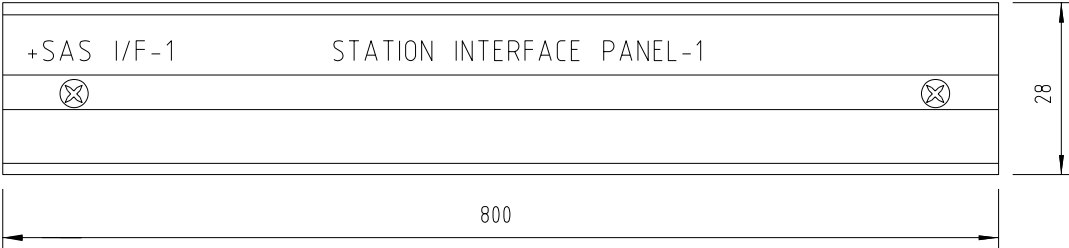
F

G

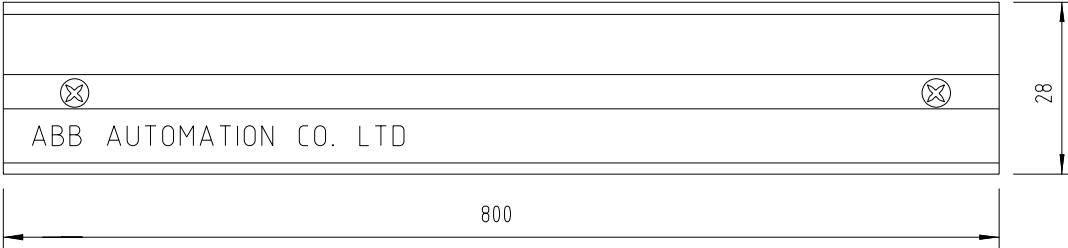


TOP VIEW FOR EARTHING BAR

U PLANE TOP LABEL



U PLANE BOTTOM LABEL



MANUFACTURING LABEL

ABB ABB Automation Co.Ltd.

PROJECT : National Grid SA - S/S 8709

ORDER REFERENCE : 2875 RF S13656

YEAR OF MANUFACTURE : 2013

PANEL NO. : +SAS I/F-1

DRAWING NO. : S13656-CD-322986

MADE IN THE KINGDOM OF SAUDI ARABIA

AS-BUILT BY _____ DATE _____ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656

			DRAWN BY <u>RIZ</u> CHECKED BY <u>JKR</u>
			DATE STARTED <u>15.3.2013</u> DATE COMPLETED _____
<u>00</u>	<u>13 20</u>	FOR APPROVAL	OPRG. DEPT. <u>CTPD</u> ENG. DEPT. <u>AUT-PSAC</u>
REV. NO.	DATE	DESCRIPTION	

ASSEMBLY DRAWING

SAS INTERFACE PANEL +SAS I/F-1

S/S 8709

S-13656

RIYADH

SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء







INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
P	C421	CD-322985	SHT CONT.	00
			G04 L00	

NG/D2-D (2012/01)

DMS

VECTOR

NGD200





	1	2	3	4	5	6	7	8	9	10																																																																																								
A			POWER SYSTEMS NETWORK MANAGEMENT PROTECTION AND SUBSTATION AUTOMATION SYSTEMS WBS NO: S-13656					ABB AUTOMATION COMPANY LTD., 414, AL-KHARJ ROAD SECOND INDUSTRIAL CITY RIYADH-11383 K.S.A																																																																																										
B																																																																																																		
C																																																																																																		
D	CONTRACTOR : ABB Contracting Company																																																																																																	
	CLIENT : National Grid sa																																																																																																	
	PROJECT : CONSTRUCTION OF NEW 132/13.8kV SS 8709 IN AL-KHARJ CITY																																																																																																	
	SUBSTATION : S/S 8709																																																																																																	
E	CONTRACT NO. : 11131113/00																																																																																																	
F	TITLE : LIST OF APPARATUS +SAS I/F-1																																																																																																	
G	<table><tr><td colspan="3">AS-BUILT BY _____ DATE _____</td><td colspan="2">CONTRACT NO. 11131113/00</td><td colspan="2">JOB ORDER NO. S-13656</td><td colspan="2">COVER SHEET</td><td colspan="2"></td></tr><tr><td colspan="3"></td><td colspan="2">DRAWN BY RIZ CHECKED BY JKR</td><td colspan="2"></td><td colspan="2">SAS INTERFACE PANEL +SAS I/F-1</td><td colspan="2"></td></tr><tr><td colspan="3"></td><td colspan="2">DATE STARTED 15.3.2013 DATE COMPLETED _____</td><td colspan="2"></td><td colspan="2">S/S 8709 S-13656</td><td colspan="2"></td></tr><tr><td colspan="3"></td><td colspan="2">OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC</td><td colspan="2"></td><td colspan="2">RIYADH SAUDI ARABIA</td><td colspan="2"></td></tr><tr><td>REV. NO.</td><td>DATE</td><td>DESCRIPTION</td><td colspan="2"></td><td colspan="2"></td><td>INDEX</td><td>PLANT NO.</td><td>DRAWING NUMBER</td><td>SHEET NO.</td></tr><tr><td>00</td><td>13 20</td><td>FOR APPROVAL</td><td colspan="2"></td><td colspan="2"></td><td>P</td><td>C421</td><td>CD-322985</td><td>SHT CONT.</td></tr><tr><td></td><td></td><td></td><td colspan="2"></td><td colspan="2"></td><td></td><td></td><td></td><td>L00 L01</td></tr><tr><td></td><td></td><td></td><td colspan="2"></td><td colspan="2"></td><td></td><td></td><td></td><td>00</td></tr></table>										AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		COVER SHEET							DRAWN BY RIZ CHECKED BY JKR				SAS INTERFACE PANEL +SAS I/F-1							DATE STARTED 15.3.2013 DATE COMPLETED _____				S/S 8709 S-13656							OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC				RIYADH SAUDI ARABIA				REV. NO.	DATE	DESCRIPTION					INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	00	13 20	FOR APPROVAL					P	C421	CD-322985	SHT CONT.											L00 L01											00
AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		COVER SHEET																																																																																											
			DRAWN BY RIZ CHECKED BY JKR				SAS INTERFACE PANEL +SAS I/F-1																																																																																											
			DATE STARTED 15.3.2013 DATE COMPLETED _____				S/S 8709 S-13656																																																																																											
			OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC				RIYADH SAUDI ARABIA																																																																																											
REV. NO.	DATE	DESCRIPTION					INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.																																																																																								
00	13 20	FOR APPROVAL					P	C421	CD-322985	SHT CONT.																																																																																								
										L00 L01																																																																																								
										00																																																																																								

	1	2	3	4	5	6	7	8	9	10	
A	SR. NO.	GA REF.	SCH. REF.	D E S C R I P T I O N		SHEET NO.	QTY.	TYPE	MAKE	ORDERING INFORMATION	COUNTRY OF ORIGIN
				STATION INTERFACE PANEL-1							
	1	U05.5001	A1	STATION COMMON ALARM SWITCHING EQUIPMENT WITH FOLLOWING SPECIFICATION		291 TO 296	1	REC 670	ABB	1MRK 002814-AC	SWEDEN
B				AUX : EL=90-250V DC							
				FREQ : 50/60HZ							
				BINARY INPUT : 14 NOS(PER CARD 16 INPUTS RL=110-125DC)							
C	2	U11.101	TS-1	TEST SWITCH FOR REC 670 (A1)		245	1	RTXP18	ABB	RK 926 115-AN	SWEDEN
D	3	U27.101	74IF	DUAL TARGET RELAY (REVERSE FLAG) (A1 DC FAIL/SPARE)		245	1	RXSF1	ABB	RK 271 019 AN	SWEDEN
				CONTACTS :1NO+2NC PER COIL							
				AUX.VOLT :1NO+2NC PER COIL							
E	4			MCB 2 POLE 6A, FOR DC SUPPLY WITH 2NC AUXILIARY CONTACT		216	1	S 282 UC-K6 S2-H02	ABB	GH S282 0164 R0377 GH S270 1916 R0003	GERMANY
		U39.5001	Q1	Q1 IF+ SUPPLY							FRANCE
	5	U39.5002	C01	CONVENIENCE OUTLET 10A, 127V AC		211	1	USM45 & USMS45	LEGRAND	74140 & 74180	
F			C02	CONVENIENCE OUTLET 10A, 220V AC							
			C1,C2	MINIATURE CIRCUIT BREAKER, 2 POLE, 10A FOR CONVENIENCE OUTLET WITH AUXILIARY SWITCH, 1NO + 1NC CONTACTS		211	2	S202-C10 S2C-H11L	ABB	2CDS 253 001 R0104 2CDS 200 936 R0001	GERMANY
	6		C3	THERMOSTAT FOR SPACE HEATER, 5-60 C		211	1	SK 3110	RITTAL	SK 3110	THIWAN
G	7	U39.5003	TJ	TELEPHONE JACK 1GANG 4WIRE		211	1	EDF410	EDISON	EDF410	SWEDEN
	8		C7	ON/OFF SWITCH FOR SPACE HEATER		211	1	M2SS1-10B MCBH-10	ABB	1SFA 611 200 R1006 1SFA 611 605 R1101	
	9		DS	DOOR SWITCH FOR CONTROL OF CUBICLE INTERNAL ILLUMINATION LAMP		211	1	LS30P	ABB	1SBV 010213 R1202	SWEDEN
H	10			INTERNAL ILLUMINATION CUBICLE LAMP SUITABLE FOR 127V AC, 60Hz SUPPLY, 20W		211	1	T-4	SUNON	SP-20W	
	11		SH	SPACE HEATER, 150w, 120V, 60Hz		211	1	MICA	GRUPPO	1FZEK 006 C001	ITALY
I	AS-BUILT BY _____ DATE _____		CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		LIST OF APPARATUS		الشركة الوطنية لنقل الكهرباء National Grid sa		
			DRAWN BY RIZ CHECKED BY JKR		SAS INTERFACE PANEL +SAS I/F-1						
	00	13 20	FOR APPROVAL		DATE STARTED 15.3.2013 DATE COMPLETED _____		S/S 8709 S-13656				
	REV. NO.	DATE	DESCRIPTION		OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC		RIYADH SAUDI ARABIA				
INDEX		PLANT NO.		DRAWING NUMBER		SHEET NO.		REV. NO.			
P		C421		CD-322985		L01 L02		00			

	1	2	3	4	5	6	7	8	9	10			
A													
B	SR. NO.	ITEM DESIGNATION	D E S C R I P T I O N		SHEET.NO.	QTY.	TYPE	MAKE	ORDERING INFORMATION	COUNTRY OF ORIGIN			
	11	X3	SPRING LOADED TERMINAL BLOCKS FOR DISCONNECTABLE AC CIRCUITS		301	10	D6/8.ST1.RS	ENTRELEC	1SNA 115 831 R0400	FRANCE			
		X4	SPRING LOADED TERMINAL BLOCK FOR DISCONNECTABLE DC CIRCUITS		301,302	5	D6/8.ST1.RS	ENTRELEC	1SNA 115 831 R0400	FRANCE			
		X41,X42	SPRING LOADED TERMINAL BLOCK FOR DISCONNECTABLE DC CIRCUITS		301,302	50,50	D6/8.ST1.RS	ENTRELEC	1SNA 115 831 R0400	FRANCE			
		X43				50							
		X51,X52	SPRING LOADED TERMINAL BLOCK FOR DC PROTN. CIRCUITS		301,302	90,90	M6/8.RS	ENTRELEC	1SNA 115 688 R2500	FRANCE			
		X53				90							
		X61,X6	KNIFE TYPE TERMINAL BLOCKS FOR COMMON ALARM CIRCUITS		302	10,5	M6/8.SNB	ENTRELEC	1SNA 115 685 R1200	FRANCE			
		XTJ	SPRING LOADED TERMINAL BLOCKS FOR TELEPHONE JACK		302	5	M6/8.RS	ENTRELEC	1SNA 115 688 R2500	FRANCE			
		XSH	SPRING LOADED TERMINAL BLOCKS FOR SPACE HEATER		302	3	M6/8.RS	ENTRELEC	1SNA 115 688 R2500	FRANCE			
C													
D													
E													
F													
G	AS-BUILT BY _____ DATE _____		CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		LIST OF APPARATUS						
			DRAWN BY RIZ CHECKED BY JKR		SAS INTERFACE PANEL +SAS I/F-1		الشركة الوطنية لنقل الكهرباء National Grid sa						
	00	13 20	FOR APPROVAL		DATE STARTED 15.3.2013 DATE COMPLETED _____		S/S 8709 S-13656		INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
	REV. NO.	DATE	DESCRIPTION		OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC		RIYADH SAUDI ARABIA		P	C421	CD-322985	SHT L02	CONT. L03














































	1	2	3	4	5	6	7	8	9	10	
A											
B											
C											
D											
E											
F											
G	AS-BUILT BY _____ DATE _____		CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		LIST OF APPARATUS				
					DRAWN BY RIZ CHECKED BY JKR		SAS INTERFACE PANEL +SAS I/F-1				
	00	13 20	FOR APPROVAL		DATE STARTED 15.3.2013 DATE COMPLETED _____		S/S 8709 S-13656				
	REV. NO.	DATE	DESCRIPTION		OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC		RIYADH SAUDI ARABIA				
								الشركة الوطنية لنقل الكهرباء		نقل الكهرباء National Grid sa	
								INDEX	PLANT NO.	DRAWING NUMBER	
								P	C421	CD-322985	
								SHEET NO.		REV. NO.	
								SHT		CONT.	
								L03		NIL	
										00	


THIS DRAWING AND THE INFORMATION CONTAINED HEREIN ARE THE SOLE PROPERTY OF NATIONAL GRID SA NO REPRODUCTION IN FULL OR IN PART SHALL BE OBTAINED FROM THIS DOCUMENT WITHOUT THE WRITTEN CONSENT OF ITS OWNER.

	1	2	3	4	5	6	7	8	9	10																																																																																																								
A			POWER SYSTEMS NETWORK MANAGEMENT PROTECTION AND SUBSTATION AUTOMATION SYSTEMS WBS NO: S-13656					ABB AUTOMATION COMPANY LTD., 414, AL-KHARJ ROAD SECOND INDUSTRIAL CITY RIYADH-11383 K.S.A																																																																																																										
B																																																																																																																		
C																																																																																																																		
D	CONTRACTOR : ABB Contracting Company																																																																																																																	
	CLIENT : National Grid SA																																																																																																																	
	PROJECT : CONSTRUCTION OF NEW 132/13.8kV SS 8709 IN AL-KHARJ CITY																																																																																																																	
	SUBSTATION : S/S 8709																																																																																																																	
E	CONTRACT NO. : 11131113/00																																																																																																																	
F	TITLE : Schematic Drawing +SAS I/F-1																																																																																																																	
G	<table><tr><td colspan="3">AS-BUILT BY _____ DATE _____</td><td colspan="2">CONTRACT NO. 11131113/00</td><td colspan="2">JOB ORDER NO. S-13656</td><td colspan="3">COVER SHEET</td><td colspan="2"> نقل الكهرباء الشركة الوطنية لنقل الكهرباء National Grid SA</td></tr><tr><td colspan="3"></td><td colspan="2">DRAWN BY RIZ</td><td colspan="2">CHECKED BY JKR</td><td colspan="3">SAS INTERFACE PANEL +SAS I/F-1</td><td colspan="2"></td></tr><tr><td colspan="3"></td><td colspan="2">DATE STARTED 15.3.2013</td><td colspan="2">DATE COMPLETED _____</td><td colspan="3">S/S 8709 S-13656</td><td colspan="2"></td></tr><tr><td colspan="3"></td><td colspan="2">OPRG. DEPT. CTPD</td><td colspan="2">ENG. DEPT. AUT-PSAC</td><td colspan="3">RIYADH SAUDI ARABIA</td><td colspan="2"></td></tr><tr><td>00</td><td>13 20</td><td>FOR APPROVAL</td><td colspan="3"></td><td colspan="3"></td><td>INDEX</td><td>PLANT NO.</td><td>DRAWING NUMBER</td><td>SHEET NO.</td><td>REV. NO.</td></tr><tr><td>REV. NO.</td><td>DATE</td><td>DESCRIPTION</td><td colspan="3"></td><td colspan="3"></td><td>P</td><td>C421</td><td>CD-322986</td><td>SHT</td><td>CONT.</td></tr><tr><td></td><td></td><td></td><td colspan="3"></td><td colspan="3"></td><td></td><td></td><td></td><td>000</td><td>001</td></tr><tr><td></td><td></td><td></td><td colspan="3"></td><td colspan="3"></td><td></td><td></td><td></td><td></td><td>00</td></tr></table>										AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		COVER SHEET			 نقل الكهرباء الشركة الوطنية لنقل الكهرباء National Grid SA					DRAWN BY RIZ		CHECKED BY JKR		SAS INTERFACE PANEL +SAS I/F-1								DATE STARTED 15.3.2013		DATE COMPLETED _____		S/S 8709 S-13656								OPRG. DEPT. CTPD		ENG. DEPT. AUT-PSAC		RIYADH SAUDI ARABIA					00	13 20	FOR APPROVAL							INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.	REV. NO.	DATE	DESCRIPTION							P	C421	CD-322986	SHT	CONT.													000	001														00
AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		COVER SHEET			 نقل الكهرباء الشركة الوطنية لنقل الكهرباء National Grid SA																																																																																																								
			DRAWN BY RIZ		CHECKED BY JKR		SAS INTERFACE PANEL +SAS I/F-1																																																																																																											
			DATE STARTED 15.3.2013		DATE COMPLETED _____		S/S 8709 S-13656																																																																																																											
			OPRG. DEPT. CTPD		ENG. DEPT. AUT-PSAC		RIYADH SAUDI ARABIA																																																																																																											
00	13 20	FOR APPROVAL							INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.																																																																																																					
REV. NO.	DATE	DESCRIPTION							P	C421	CD-322986	SHT	CONT.																																																																																																					
												000	001																																																																																																					
													00																																																																																																					

	1	2	3	4	5	6	7	8	9	10																																																																																																																																																																																																																																																																														
A																																																																																																																																																																																																																																																																																								
B	<table><thead><tr><th>CONTENTS</th><th>ABB SHT.NO.</th><th>REV.00</th><th>REV.01</th><th>REV.02</th><th>REV.03</th></tr></thead><tbody><tr><td>COVER SHEET</td><td>000</td><td>X</td><td></td><td></td><td></td></tr><tr><td>CONTENTS SHEET</td><td>001</td><td>X</td><td></td><td></td><td></td></tr><tr><td>GRAPHICAL SYMBOLS FOR DIAGRAMS</td><td>011</td><td>X</td><td></td><td></td><td></td></tr><tr><td>GRAPHICAL SYMBOLS FOR DIAGRAMS</td><td>012</td><td>X</td><td></td><td></td><td></td></tr><tr><td>COMMON LEGEND</td><td>013</td><td>X</td><td></td><td></td><td></td></tr><tr><td>FERRULE AND WIRING DETAILS</td><td>014</td><td>X</td><td></td><td></td><td></td></tr><tr><td>PRIMARY SYSTEM</td><td>051</td><td>X</td><td></td><td></td><td></td></tr><tr><td>AC SUPPLY FOR ILLUMINATION & POWER SOCKET</td><td>211</td><td>X</td><td></td><td></td><td></td></tr><tr><td>AUXLIARY CONTACTS</td><td>212</td><td>X</td><td></td><td></td><td></td></tr><tr><td>DC SUPPLY DISTRIBUTION</td><td>216</td><td>X</td><td></td><td></td><td></td></tr><tr><td>STATION INTERFACE PANEL BINARY INPUTS</td><td>231</td><td>X</td><td></td><td></td><td></td></tr><tr><td>STATION INTERFACE PANEL BINARY INPUTS</td><td>232</td><td>X</td><td></td><td></td><td></td></tr><tr><td>STATION INTERFACE PANEL BINARY INPUTS</td><td>233</td><td>X</td><td></td><td></td><td></td></tr><tr><td>STATION INTERFACE PANEL BINARY INPUTS</td><td>234</td><td>X</td><td></td><td></td><td></td></tr><tr><td>STATION INTERFACE PANEL BINARY INPUTS</td><td>235</td><td>X</td><td></td><td></td><td></td></tr><tr><td>STATION INTERFACE PANEL BINARY INPUTS</td><td>236</td><td>X</td><td></td><td></td><td></td></tr><tr><td>STATION INTERFACE PANEL BINARY INPUTS</td><td>237</td><td>X</td><td></td><td></td><td></td></tr><tr><td>STATION INTERFACE PANEL BINARY INPUTS</td><td>238</td><td>X</td><td></td><td></td><td></td></tr><tr><td>STATION INTERFACE PANEL BINARY INPUTS</td><td>239</td><td>X</td><td></td><td></td><td></td></tr><tr><td>STATION INTERFACE PANEL BINARY INPUTS</td><td>240</td><td>X</td><td></td><td></td><td></td></tr><tr><td>STATION INTERFACE PANEL BINARY INPUTS</td><td>241</td><td>X</td><td></td><td></td><td></td></tr></tbody></table>					CONTENTS	ABB SHT.NO.	REV.00	REV.01	REV.02	REV.03	COVER SHEET	000	X				CONTENTS SHEET	001	X				GRAPHICAL SYMBOLS FOR DIAGRAMS	011	X				GRAPHICAL SYMBOLS FOR DIAGRAMS	012	X				COMMON LEGEND	013	X				FERRULE AND WIRING DETAILS	014	X				PRIMARY SYSTEM	051	X				AC SUPPLY FOR ILLUMINATION & POWER SOCKET	211	X				AUXLIARY CONTACTS	212	X				DC SUPPLY DISTRIBUTION	216	X				STATION INTERFACE PANEL BINARY INPUTS	231	X				STATION INTERFACE PANEL BINARY INPUTS	232	X				STATION INTERFACE PANEL BINARY INPUTS	233	X				STATION INTERFACE PANEL BINARY INPUTS	234	X				STATION INTERFACE PANEL BINARY INPUTS	235	X				STATION INTERFACE PANEL BINARY INPUTS	236	X				STATION INTERFACE PANEL BINARY INPUTS	237	X				STATION INTERFACE PANEL BINARY INPUTS	238	X				STATION INTERFACE PANEL BINARY INPUTS	239	X				STATION INTERFACE PANEL BINARY INPUTS	240	X				STATION INTERFACE PANEL BINARY INPUTS	241	X				<table><thead><tr><th>CONTENTS</th><th>ABB SHT.NO.</th><th>REV.00</th><th>REV.01</th><th>REV.02</th><th>REV.03</th></tr></thead><tbody><tr><td>STATION INTERFACE PANEL BINARY INPUTS</td><td>242</td><td>X</td><td></td><td></td><td></td></tr><tr><td>STATION INTERFACE PANEL BINARY INPUTS</td><td>243</td><td>X</td><td></td><td></td><td></td></tr><tr><td>STATION INTERFACE PANEL BINARY INPUTS</td><td>244</td><td>X</td><td></td><td></td><td></td></tr><tr><td>DC SUPERVISION CIRCUIT</td><td>245</td><td>X</td><td></td><td></td><td></td></tr><tr><td>COMMON ALARM CIRCUITS</td><td>290</td><td>X</td><td></td><td></td><td></td></tr><tr><td>BLOCK REFERENCE</td><td>291</td><td>X</td><td></td><td></td><td></td></tr><tr><td>BLOCK REFERENCE</td><td>292</td><td>X</td><td></td><td></td><td></td></tr><tr><td>BLOCK REFERENCE</td><td>293</td><td>X</td><td></td><td></td><td></td></tr><tr><td>BLOCK REFERENCE</td><td>294</td><td>X</td><td></td><td></td><td></td></tr><tr><td>BLOCK REFERENCE</td><td>295</td><td>X</td><td></td><td></td><td></td></tr><tr><td>BLOCK REFERENCE</td><td>296</td><td>X</td><td></td><td></td><td></td></tr><tr><td>TERMINAL BLOCK REFERENCE</td><td>301</td><td>X</td><td></td><td></td><td></td></tr><tr><td>TERMINAL BLOCK REFERENCE</td><td>302</td><td>X</td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></tbody></table>					CONTENTS	ABB SHT.NO.	REV.00	REV.01	REV.02	REV.03	STATION INTERFACE PANEL BINARY INPUTS	242	X				STATION INTERFACE PANEL BINARY INPUTS	243	X				STATION INTERFACE PANEL BINARY INPUTS	244	X				DC SUPERVISION CIRCUIT	245	X				COMMON ALARM CIRCUITS	290	X				BLOCK REFERENCE	291	X				BLOCK REFERENCE	292	X				BLOCK REFERENCE	293	X				BLOCK REFERENCE	294	X				BLOCK REFERENCE	295	X				BLOCK REFERENCE	296	X				TERMINAL BLOCK REFERENCE	301	X				TERMINAL BLOCK REFERENCE	302	X																																																									
	CONTENTS	ABB SHT.NO.	REV.00	REV.01	REV.02	REV.03																																																																																																																																																																																																																																																																																		
	COVER SHEET	000	X																																																																																																																																																																																																																																																																																					
CONTENTS SHEET	001	X																																																																																																																																																																																																																																																																																						
GRAPHICAL SYMBOLS FOR DIAGRAMS	011	X																																																																																																																																																																																																																																																																																						
GRAPHICAL SYMBOLS FOR DIAGRAMS	012	X																																																																																																																																																																																																																																																																																						
COMMON LEGEND	013	X																																																																																																																																																																																																																																																																																						
FERRULE AND WIRING DETAILS	014	X																																																																																																																																																																																																																																																																																						
PRIMARY SYSTEM	051	X																																																																																																																																																																																																																																																																																						
AC SUPPLY FOR ILLUMINATION & POWER SOCKET	211	X																																																																																																																																																																																																																																																																																						
AUXLIARY CONTACTS	212	X																																																																																																																																																																																																																																																																																						
DC SUPPLY DISTRIBUTION	216	X																																																																																																																																																																																																																																																																																						
STATION INTERFACE PANEL BINARY INPUTS	231	X																																																																																																																																																																																																																																																																																						
STATION INTERFACE PANEL BINARY INPUTS	232	X																																																																																																																																																																																																																																																																																						
STATION INTERFACE PANEL BINARY INPUTS	233	X																																																																																																																																																																																																																																																																																						
STATION INTERFACE PANEL BINARY INPUTS	234	X																																																																																																																																																																																																																																																																																						
STATION INTERFACE PANEL BINARY INPUTS	235	X																																																																																																																																																																																																																																																																																						
STATION INTERFACE PANEL BINARY INPUTS	236	X																																																																																																																																																																																																																																																																																						
STATION INTERFACE PANEL BINARY INPUTS	237	X																																																																																																																																																																																																																																																																																						
STATION INTERFACE PANEL BINARY INPUTS	238	X																																																																																																																																																																																																																																																																																						
STATION INTERFACE PANEL BINARY INPUTS	239	X																																																																																																																																																																																																																																																																																						
STATION INTERFACE PANEL BINARY INPUTS	240	X																																																																																																																																																																																																																																																																																						
STATION INTERFACE PANEL BINARY INPUTS	241	X																																																																																																																																																																																																																																																																																						
CONTENTS	ABB SHT.NO.	REV.00	REV.01	REV.02	REV.03																																																																																																																																																																																																																																																																																			
STATION INTERFACE PANEL BINARY INPUTS	242	X																																																																																																																																																																																																																																																																																						
STATION INTERFACE PANEL BINARY INPUTS	243	X																																																																																																																																																																																																																																																																																						
STATION INTERFACE PANEL BINARY INPUTS	244	X																																																																																																																																																																																																																																																																																						
DC SUPERVISION CIRCUIT	245	X																																																																																																																																																																																																																																																																																						
COMMON ALARM CIRCUITS	290	X																																																																																																																																																																																																																																																																																						
BLOCK REFERENCE	291	X																																																																																																																																																																																																																																																																																						
BLOCK REFERENCE	292	X																																																																																																																																																																																																																																																																																						
BLOCK REFERENCE	293	X																																																																																																																																																																																																																																																																																						
BLOCK REFERENCE	294	X																																																																																																																																																																																																																																																																																						
BLOCK REFERENCE	295	X																																																																																																																																																																																																																																																																																						
BLOCK REFERENCE	296	X																																																																																																																																																																																																																																																																																						
TERMINAL BLOCK REFERENCE	301	X																																																																																																																																																																																																																																																																																						
TERMINAL BLOCK REFERENCE	302	X																																																																																																																																																																																																																																																																																						
C																																																																																																																																																																																																																																																																																								
D																																																																																																																																																																																																																																																																																								
E																																																																																																																																																																																																																																																																																								
F																																																																																																																																																																																																																																																																																								
G	<table><tr><td colspan="3">AS-BUILT BY _____ DATE _____</td><td colspan="2">CONTRACT NO. 11131113/00</td><td colspan="2">JOB ORDER NO. S-13656</td><td colspan="2">CONTENTS SHEET</td><td colspan="2"><div>الشركة الوطنية لنقل الكهرباء National Grid sa</div></td></tr><tr><td colspan="3"></td><td colspan="2">DRAWN BY RIZ CHECKED BY JKR</td><td colspan="2"></td><td colspan="2">SAS INTERFACE PANEL +SAS I/F-1</td><td colspan="2"></td></tr><tr><td colspan="3"></td><td colspan="2">DATE STARTED 15.3.2013 DATE COMPLETED _____</td><td colspan="2"></td><td colspan="2">S/S 8709 S-13656</td><td colspan="2"></td></tr><tr><td colspan="3">00 13 20 FOR APPROVAL</td><td colspan="2">OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC</td><td colspan="2">RIYADH SAUDI ARABIA</td><td colspan="2">INDEX P PLANT NO. C421 DRAWING NUMBER CD-322986</td><td colspan="2">SHEET NO. SHT 001 CONT. 011 REV. NO. 00</td></tr><tr><td colspan="3">REV. NO. DATE DESCRIPTION</td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td><td colspan="2"></td></tr></table>										AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		CONTENTS SHEET		<div>الشركة الوطنية لنقل الكهرباء National Grid sa</div>					DRAWN BY RIZ CHECKED BY JKR				SAS INTERFACE PANEL +SAS I/F-1							DATE STARTED 15.3.2013 DATE COMPLETED _____				S/S 8709 S-13656				00 13 20 FOR APPROVAL			OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC		RIYADH SAUDI ARABIA		INDEX P PLANT NO. C421 DRAWING NUMBER CD-322986		SHEET NO. SHT 001 CONT. 011 REV. NO. 00		REV. NO. DATE DESCRIPTION																																																																																																																																																																																																																																	
	AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		CONTENTS SHEET		<div>الشركة الوطنية لنقل الكهرباء National Grid sa</div>																																																																																																																																																																																																																																																																														
				DRAWN BY RIZ CHECKED BY JKR				SAS INTERFACE PANEL +SAS I/F-1																																																																																																																																																																																																																																																																																
			DATE STARTED 15.3.2013 DATE COMPLETED _____				S/S 8709 S-13656																																																																																																																																																																																																																																																																																	
00 13 20 FOR APPROVAL			OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC		RIYADH SAUDI ARABIA		INDEX P PLANT NO. C421 DRAWING NUMBER CD-322986		SHEET NO. SHT 001 CONT. 011 REV. NO. 00																																																																																																																																																																																																																																																																															
REV. NO. DATE DESCRIPTION																																																																																																																																																																																																																																																																																								

1	2	3	4	5	6	7	8	9	10
A									
B									
C									
D									
E									
F									
G									

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	FRAME CONNECTION		MAIN CONTACT OF A CIRCUIT BREAKER		RELAY WITH TWO MAKE CONTACTS, ONE OF THEM DELAYED WHEN OPERATING
	EARTH CONNECTION		PASSING MAKE CONTACT CLOSING MOMENTARILY DURING OPERATION AND RELEASE		RELAY WITH TWO ACTUATORS AND A TWO STABLE POSITIONS
	RESISTOR		BREAK CONTACT DELAYED WHEN OPERATING		
	VARIABLE RESISTOR		MAKE CONTACT DELAYED WHEN RELEASING		SIGNALLING LAMP
	RESISTOR WITH PRESET ADJUSTMENT		TWO MECHANICAL LINKS CROSSING WITHOUT CONNECTION		MECHANICAL INDICATOR WITH AUTOMATIC RESET
	CAPACITOR		JUNCTION OF MECHANICAL LINKS		MECHANICAL INDICATOR WITH NON-AUTOMATIC RESET
	SEMICONDUCTOR DIODE USED AS A CAPACITIVE DEVICE		AUTOMATIC RESET		ELECTRICALLY CONTROLLED MECHANICAL INDICATOR WITH AUTOMATIC RESET
	OPEN CONTACT, MAKE CONTACT		NON-AUTOMATIC RESET		ELECTRICALLY CONTROLLED MECHANICAL INDICATOR WITH NON-AUTOMATIC RESET
	CLOSED CONTACT, BREAK CONTACT		SWITCHING DEVICE WITH MANUAL OPERATION AND WITH AUTOMATIC RESET		RELAY WITH MAKE CONTACT
	CHANGE-OVER CONTACT, BREAK BEFORE MAKE		SWITCHING DEVICE WITH MANUAL OPERATION AND WITH NON-AUTOMATIC RESET		RELAY WITH CHANGE-OVER CONTACT
	MAKE CONTACT WHICH IS EARLY WHEN OPERATING AND LATE WHEN RELEASING		CHANGE-OVER SWITCHING DEVICE WITH MANUAL CONTROL AUTOMATIC RESET FROM POSITION 1-2 TO THE NEUTRAL POSITION		ELECTRO-MECHANICAL POSITION INDICATOR WITH ONE DE-ENERGIZED AND ONE OPERATED POSITION
	BREAK CONTACT WHICH IS LATE WHEN OPERATING AND EARLY WHEN RELEASING		RELAY WITH MAKE CONTACT, DELAYED WHEN OPERATING		ELECTRO-MECHANICAL POSITION INDICATOR WITH ONE DE-ENERGIZED AND TWO OPERATED POSITION
	SWITCHING DEVICE WITH MANUAL CONTROL		RELAY WITH MAKE CONTACT, DELAYED WHEN RELEASING		BELL, BUZZER
	MAKE CONTACT DELAYED WHEN OPERATING		RELAY WITH MAKE CONTACT, DELAYED WHEN OPERATING AND RELEASING		SIREN , HORN
	BREAK CONTACT DELAYED WHEN RELEASING				
	MAIN CONTACT OF A SWITCH DISCONNECTOR				
	MAIN CONTACT OF A DISCONNECTOR				

AS-BUILT BY _____ DATE _____		CONTRACT NO. 11131113/00	JOB ORDER NO. S-13656	GRAPHICAL SYMBOLS FOR DIAGRAMS		الشركة الوطنية لنقل الكهرباء  نقل الكهرباء National Grid SA			
		DRAWN BY <u>RIZ</u> CHECKED BY <u>JKR</u>		SAS INTERFACE PANEL +SAS I/F-1					
		DATE STARTED <u>15.3.2013</u> DATE COMPLETED _____		S/S 8709 S-13656		INDEX		PLANT NO.	
		OPRG. DEPT. <u>CTPD</u> ENG. DEPT. <u>AUT-PSAC</u>		RIYADH SAUDI ARABIA		P		C421	
00		13 20		FOR APPROVAL		DRAWING NUMBER		SHEET NO.	
REV. NO.		DATE		DESCRIPTION		CD-322986		011 012	
								00	

NG/D2-D (2012/01)

DMS VECTOR NGD200

1		2		3		4		5		6		7		8		9		10	
A																			
B																			
C																			
D																			
E																			
F																			
G																			
H																			
I																			
J																			
K																			
L																			
M																			
N																			
O																			
P																			
Q																			
R																			
S																			
T																			
U																			
V																			
W																			
X																			
Y																			
Z																			
AA																			
AB																			
AC																			
AD																			
AE																			
AF																			
AG																			
AH																			
AI																			
AJ																			
AK																			
AL																			
AM																			
AN																			
AO																			
AP																			
AQ																			
AR																			
AS																			
AT																			
AU																			
AV																			
AW																			
AX																			
AY																			
AZ																			
BA																			
BB																			
BC																			
BD																			
BE																			
BF																			
BG																			
BH																			
BI																			
BJ																			
BK																			
BL																			
BM																			
BN																			
BO																			
BP																			
BQ																			
BR																			
BS																			
BT																			
BU																			
BV																			
BW																			
BX																			
BY																			
BZ																			
CA																			
CB																			
CC																			
CD																			
CE																			
CF																			
CG																			
CH																			
CI																			
CJ																			
CK																			
CL																			
CM																			
CN																			
CO																			
CP																			
CQ																			
CR																			
CS																			
CT																			
CU																			
CV																			
CW																			
CX																			
CY																			
CZ																			
DA																			
DB																			
DC																			
DD																			
DE																			
DF																			
DG																			
DH																			
DI																			
DJ																			
DK																			
DL																			
DM																			
DN																			
DO																			
DP																			
DQ																			
DR																			
DS																			
DT																			
DU																			
DV																			
DW																			
DX																			
DY																			
DZ																			
EA																			
EB																			
EC																			
ED																			
EE																			
EF																			
EG																			
EH																			
EI																			
EJ																			
EK																			
EL																			
EM																			
EN																			
EO																			
EP																			
EQ																			
ER																			
ES																			
ET																			
EU																			
EV																			
EW																			
EX																			
EY																			
EZ																			
FA																			
FB																			
FC																			
FD																			
FE																			
FF																			
FG																			
FH																			
FI																			
FJ																			
FK																			
FL																			
FM																			
FN																			
FO																			
FP																			
FQ																			
FR																			
FS																			
FT																			
FU																			
FV																			
FW																			
FX																			
FY																			
FZ																			
GA																			
GB																			
GC																			
GD																			
GE																			
GF																			
GG																			
GH																			
GI																			
GJ																			
GK																			
GL																			
GM																			
GN																			
GO																			
GP																			
GQ																			
GR																			
GS																			
GT																			
GU																			
GV																			
GW																			
GX																			
GY																			
GZ																			
HA																			
HB																			
HC																			
HD																			
HE																			
HF																			
HG																			
HH																			
HI																			
HJ																			
HK																			
HL																			
HM																			
HN																			
HO																			
HP																			
HQ																			
HR																			
HS																			
HT																			
HU																			
HV																			
HW																			
HX																			
HY																			
HZ																			
IA																			
IB																			
IC																			
ID																			
IE																			
IF																			
IG																			
IH																			
II																			
IJ																			
IK																			
IL																			
IM																			
IN																			
IO																			
IP																			
IQ																			
IR																			
IS																			
IT																			
IU																			
IV																			
IW																			
IX																			
IY																			
IZ																			
JA																			
JB																			
JC																			
JD																			
JE																			
JF																			
JG																			
JH																			
JI																			
JJ																			
JK																			
JL																			
JM																			
JN																			
JO																			
JP																			
JQ																			
JR																			
JS																			
JT																			
JU																			
JV																			
JW																			
JX																			
JY																			
JZ																			
KA																			
KB																			
KC																			
KD																			
KE																			
KF																			
KG																			
KH																			
KI																			
KJ																			
KK																			
KL																			
KM																			
KN																			
KO																			
KP																			
KQ																			
KR																			
KS																			
KT																			
KU																			
KV																			
KW																			
KX																			
KY																			
KZ																			
LA																			
LB																			
LC																			
LD																			
LE																			
LF																			
LG																			
LH																			
LI																			
LJ																			
LK																			
LL																			
LM																			
LN																			
LO																			
LP																			
LQ																			
LR																			
LS																			
LT																			
LU																			
LV																			
LW																			
LX																			
LY																			
LZ																			
MA																			
MB																			
MC																			
MD																			
ME																			
MF																			
MG																			
MH																			
MI																			
MJ																			
MK																			
ML																			
MM																			
MN																			
MO																			
MP																			
MQ																			
MR																			
MS																			
MT																			
MU																			
MV																			
MW																			
MX																			
MY																			
MZ																			
NA																			
NB																			
NC																			
ND																			
NE																			
NF																			
NG																			
NH																			
NI																			
NJ																			
NK																			
NL																			
NM																			
NN																			
NO																			
NP																			
NQ																			
NR																			
NS																			
NT																			
NU																			
NV																			
NW																			
NX																			
NY																			
NZ																			
OA																			
OB																			
OC																			
OD																			
OE																			
OF																			
OG																			
OH																			
OI																			
OJ																			
OK																			
OL																			
OM																			
ON																			
OO																			
OP																			
OQ																			
OR																			
OS																			
OT																			
OU																			
OV																			
OW																			
OX																			
OY																			
OZ																			
PA																			
PB																			
PC																			
PD																			
PE																			
PF																			
PG																			
PH																			
PI																			
PJ																			
PK																			
PL																			
PM																			
PN																			
PO																			
PP																			
PQ																			
PR																			
PS																			
PT																			
PU																			
PV																			
PW																			
PX																			
PY																			
PZ																			
QA																			
QB																			
QC																			
QD																			
QE																			
QF																			
QG																			
QH																			
QI																			
QJ																			
QK																			
QL																			
QM																			
QN																			
QO																			
QP																			
QQ																			
QR																			
QS																			
QT																			
QU																			
QV																			
QW																			
QX																			
QY																			
QZ																			
RA																			
RB																			
RC																			
RD																			
RE																			
RF																			
RG																			
RH																			
RI																			
RJ																			
RK																			
RL																			
RM																			
RN																			
RO																			
RP																			
RQ																			
RR																			
RS																			
RT																			
RU																			
RV																			
RW																			
RX																			
RY																			
RZ																			
SA																			
SB																			
SC																			
SD																			
SE																			
SF																			
SG																			
SH																			
SI																			
SJ																			
SK																			
SL																			
SM																			
SN																			
SO																			
SP																			
SQ																			
SR																			
SS																			
ST																			
SU																			
SV																			
SW																			
SX																			
SY																			
SZ																			
TA																			
TB																			
TC																			
TD																			
TE																			
TF																			
TG																			
TH																			
TI																			
TJ																			
TK																			
TL																			
TM																			
TN																			
TO																			
TP																			
TQ																			
TR																			
TS																			
TT																			
TU																			
TV																			
TW																			
TX																			
TY																			
TZ																			
UA																			
UB																			
UC																			
UD																			
UE																			
UF																			
UG																			
UH																			
UI																			
UJ																			
UK																			
UL																			
UM																			
UN																			
UO																			
UP																			
UQ																			
UR																			
US																			
UT																			
UU																			
UV																			
UW																			
UX																			
UY																			
UZ																			
VA																			
VB																			
VC																			
VD																			
VE																			
VF																			
VG																			
VH																			
VI																			
VJ																			
VK																			
VL																			
VM																			
VN																			
VO																			
VP																			
VQ																			
VR																			
VS																			
VT																			
VU																			
VV																			
VW																			
VX																			
VY																			
VZ																			
WA																			
WB																			
WC																			
WD																			
WE																			
WF																			
WG																			
WH																			
WI																			
WJ																			
WK																			
WL																			
WM																			
WN																			
WO																			
WP																			
WQ																			
WR																			
WS																			
WT																			
WU																			
WV																			
WW																			
WX																			
WY																			
WZ																			
XA																			
XB																			
XC																			
XD																			
XE																			
XF																			
XG																			
XH																			
XI																			
XJ																			
XK																			
XL																			
XM																			
XN																			
XO																			
XP																			
XQ																			
XR																			
XS																			
XT																			
XU																			
XV																			
XW																			
XX																			
XY																			
XZ																			
YA																			
YB																			
YC																			
YD																			
YE																			
YF																			
YG																			
YH																			
YI																			
YJ																			
YK																			
YL																			
YM																			
YN																			
YO																			
YP																			
YQ																			
YR																			
YS																			
YT																			
YU																			
YV																			
YW																			
YX																			
YY																			
YZ																			
ZA																			
ZB																			
ZC																			
ZD																			
ZE																			
ZF																			
ZG																			
ZH																			
ZI																			
ZJ																			
ZK																			
ZL																			
ZM																			
ZN																			
ZO																			
ZP																			
ZQ																			
ZR																			
ZS																			
ZT																			
ZU																			
ZV																			
ZW																			
ZX																			
ZY																			
ZZ																			

AS-BUILT BY _____ DATE _____		CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		GRAPHICAL SYMBOLS FOR DIAGRAMS		<div>الشركة الوطنية لنقل الكهرباء</div> <div>نقل الكهرباء</div> <div>National Grid SA</div>				
		DRAWN BY RIZ CHECKED BY JKR		SAS INTERFACE PANEL +SAS I/F-1								
		DATE STARTED 15.3.2013 DATE COMPLETED _____		S/S 8709 S-13656		INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.		
00		13 20		FOR APPROVAL		RIYADH SAUDI ARABIA		P	C421	CD-322986	SHT 012 CONT. 013	00
REV. NO.	DATE	DESCRIPTION		OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC								

NG/D2-D (2012/01)

DMS VECTOR NGD200

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

A

B

C

D

E

F

G

LEGENDS

±R1	DC SUPPLY - MAIN PROTECTION
±R2	DC SUPPLY - SECONDARY PROTECTION
±R3	DC SUPPLY - BACK UP PROTECTION
±IT	DC SUPPLY - INTER TRIP
FL	DC SUPPLY - FLASHING CIRCUIT
BB RS±	DC SUPPLY - BUS BAR - PROTECTION RESET
BB CBF±/CBF±	DC SUPPLY - CBF PROTECTION
R	RESET BUS - ALARM SYSTEM
CR	CONTROL ROOM
ECC	ENERGY CONTROL CENTRE
LOCAL	THE LOCATION OF CONTROLLED DEVICE
REMOTE	ANY OTHER LOCATION NOT LOCAL
ON	CB NORMALLY OPEN AUXILIARY CONTACT
OFF	CB NORMALLY CLOSED AUXILIARY CONTACT
A	COMMON
T	TEST POSITION
S	SERVICE POSITION
CS	CLOSE IN SERVICE POSITION
CT	CLOSE IN TEST POSITION
LS	LOCAL SERVICE
LT	LOCAL TEST
LC	LOCAL CLOSE
LO	LOCAL OPEN
RO	REMOTE OPEN

NOTES

LABELS

WHITE LABEL WITH BLACK LETTERING WILL BE PROVIDED FOR ALL MOUNTED APPARATUS EQUIPMENT IDENTIFICATION AND FUNCTION REFERENCE LABEL WILL BE PROVIDED FOR FRONT MOUNTED EQUIPMENTS OF THE PANEL AND EQUIPMENT IDENTIFICATION LABEL WILL BE PROVIDED FOR INTERNALLY MOUNTED EQUIPMENTS

WIRING

PVC INSULATED 600V GRADE
2.5 SQ.mm. YELLOW COLOURED FOR CT CIRCUITS
2.5 SQ.mm. RE COLOURED FOR VT CIRCUITS
1.5 SQ.mm. GREY COLOURED FOR DC SUPPLY, SCADA AND CONTROL CIRCUITS
1.5 SQ.mm. BLUE COLOURED FOR COMMON ALARM SIGNALS
2.5 SQ.mm. BLACK COLOURED FOR AVC AND AC CIRCUITS
2.5 SQ.mm. YELLOW/GREEN COLOURED FOR EARTHING CONNECTIONS
FOLLOWING MARKERS SHALL BE PROVIDED ON FOLLOWING WIRES:
+ SIGN FOR DC + WIRE
- SIGN FOR DC - WIRE

LUGS

A. CT CIRCUITS- RING TYPE
B. OTHER CIRCUITS - SPADE TYPE

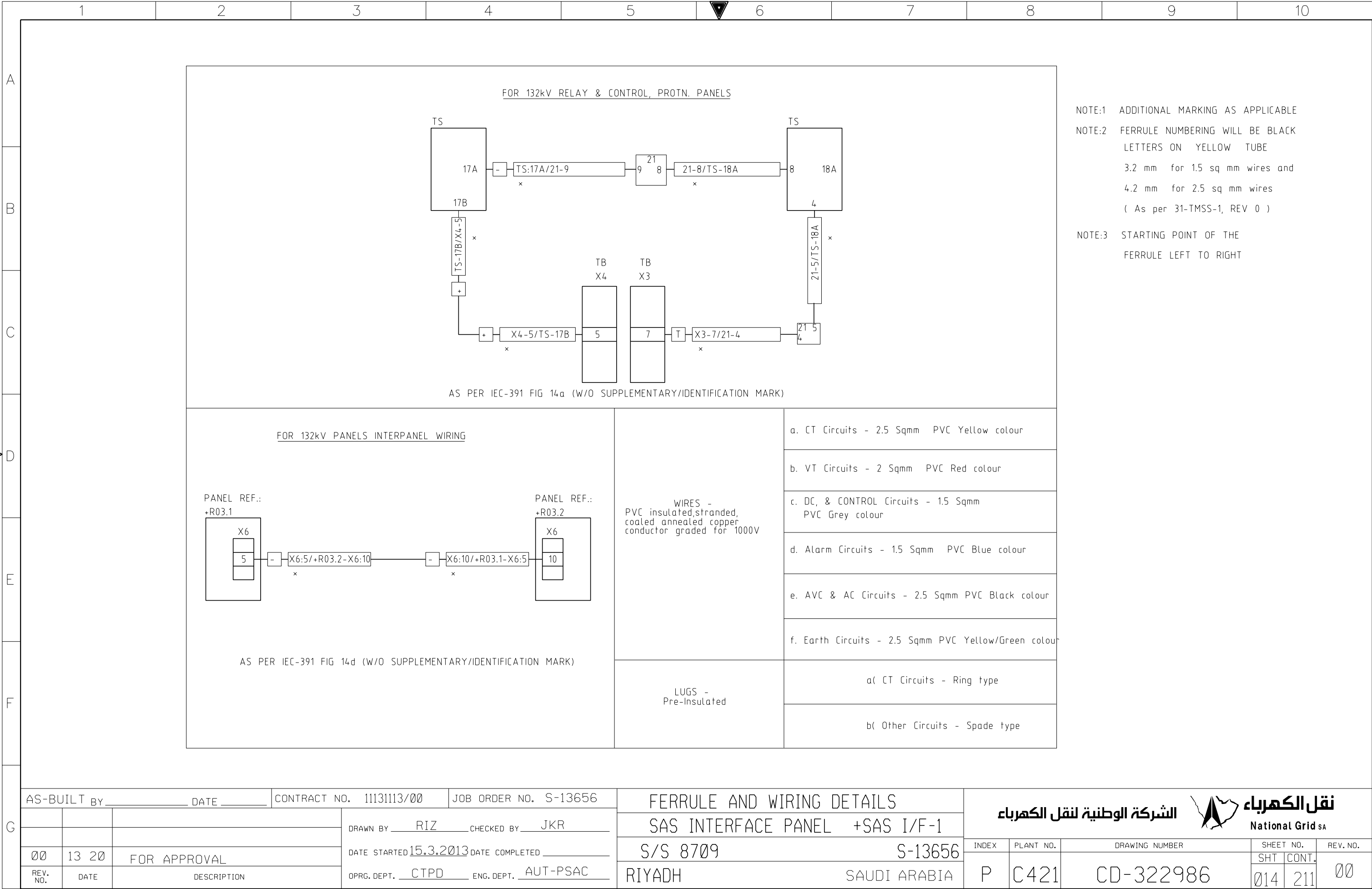
FERULLING

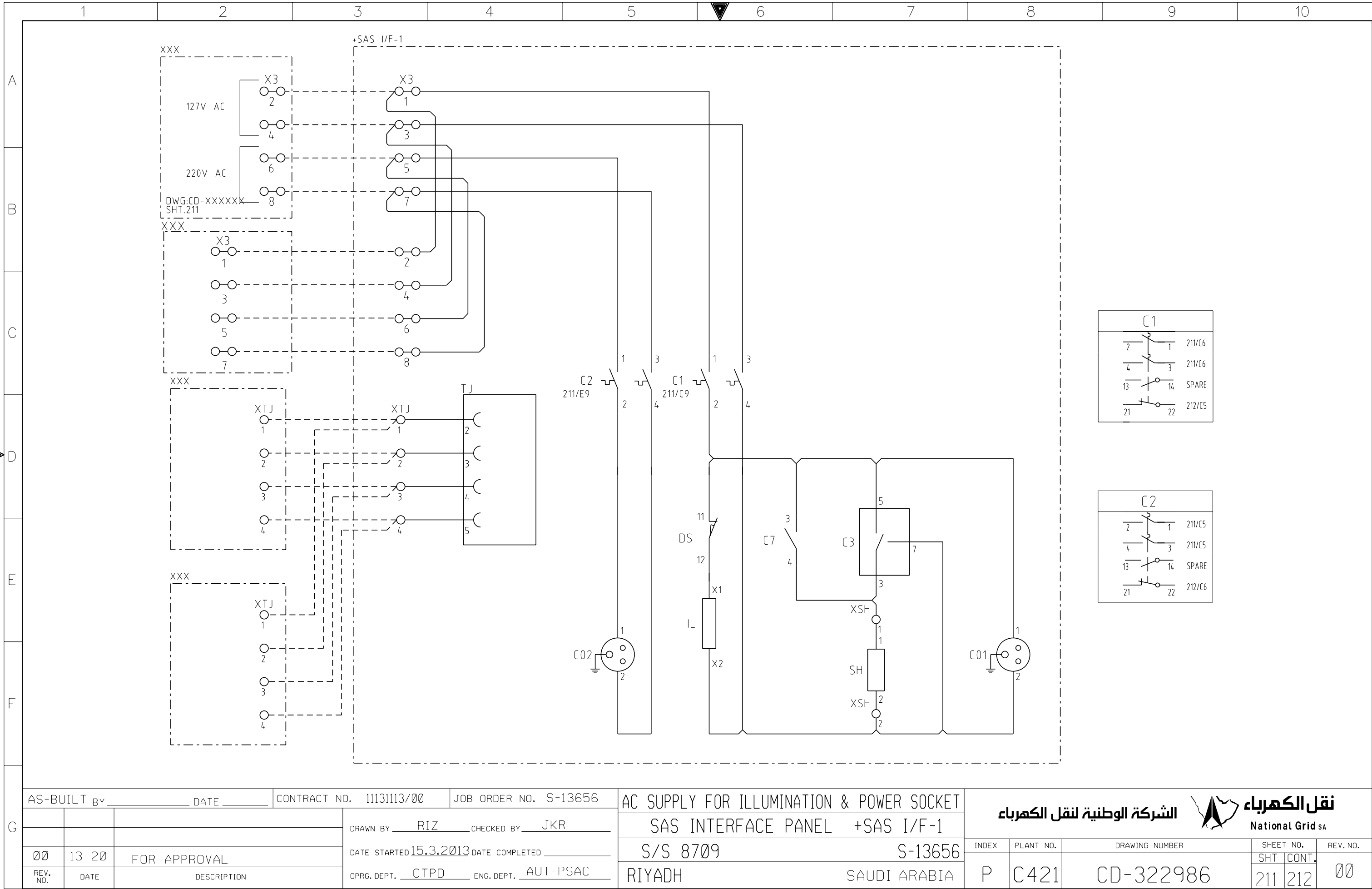
YELLO TUBE 3.2 mm FOR 1.5SQ mm WIRES AND 4.2 FOR 2.5 SQ mm WIRES (AS PER 31 - TMSS-1, RE.0)

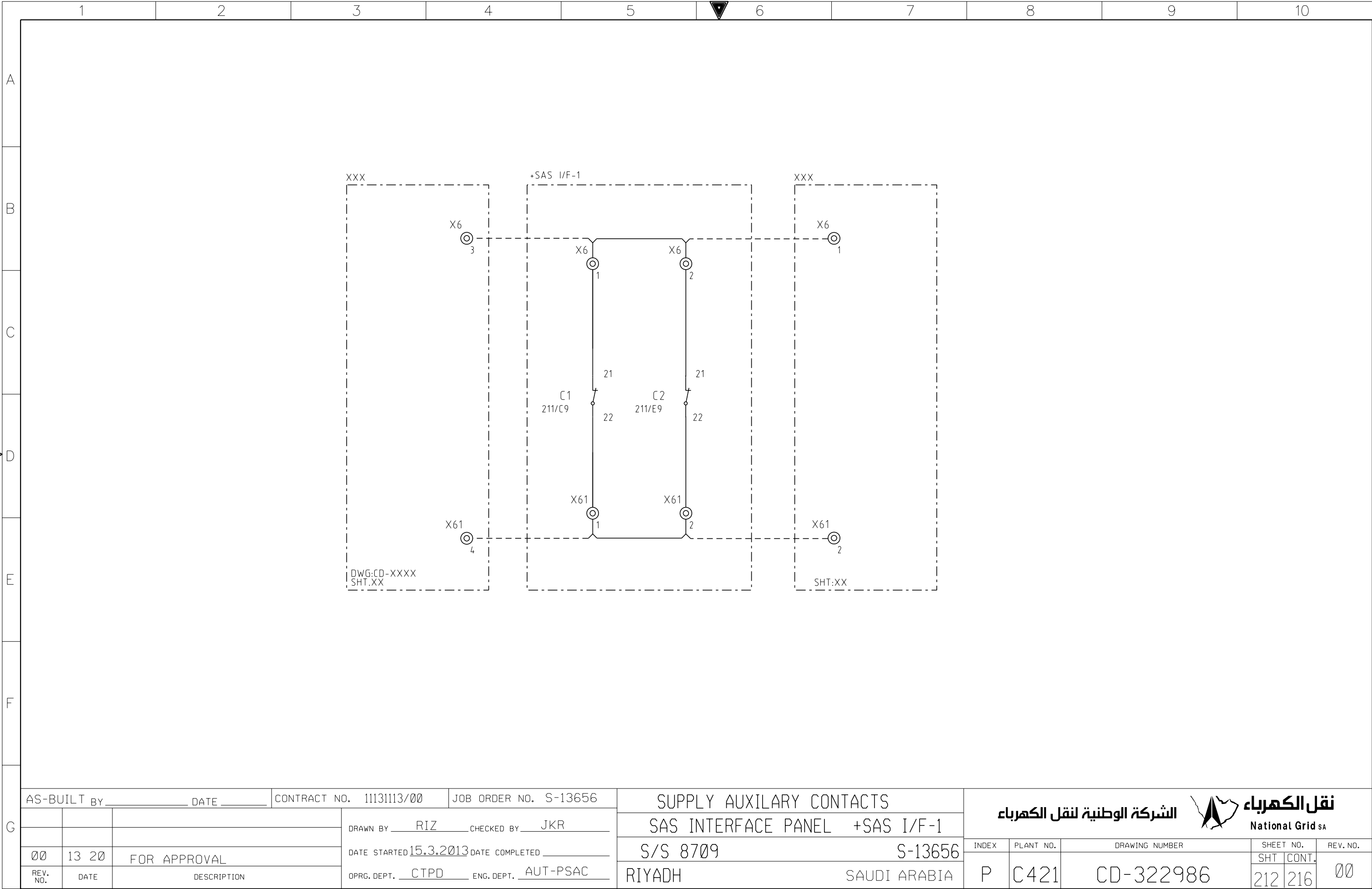
AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00	JOB ORDER NO. S-13656
			DRAWN BY RIZ	CHECKED BY JKR
			DATE STARTED 15.3.2013	DATE COMPLETED _____
00	13 20	FOR APPROVAL	OPRG. DEPT. CTPD	ENG. DEPT. AUT-PSAC
REV. NO.	DATE	DESCRIPTION		

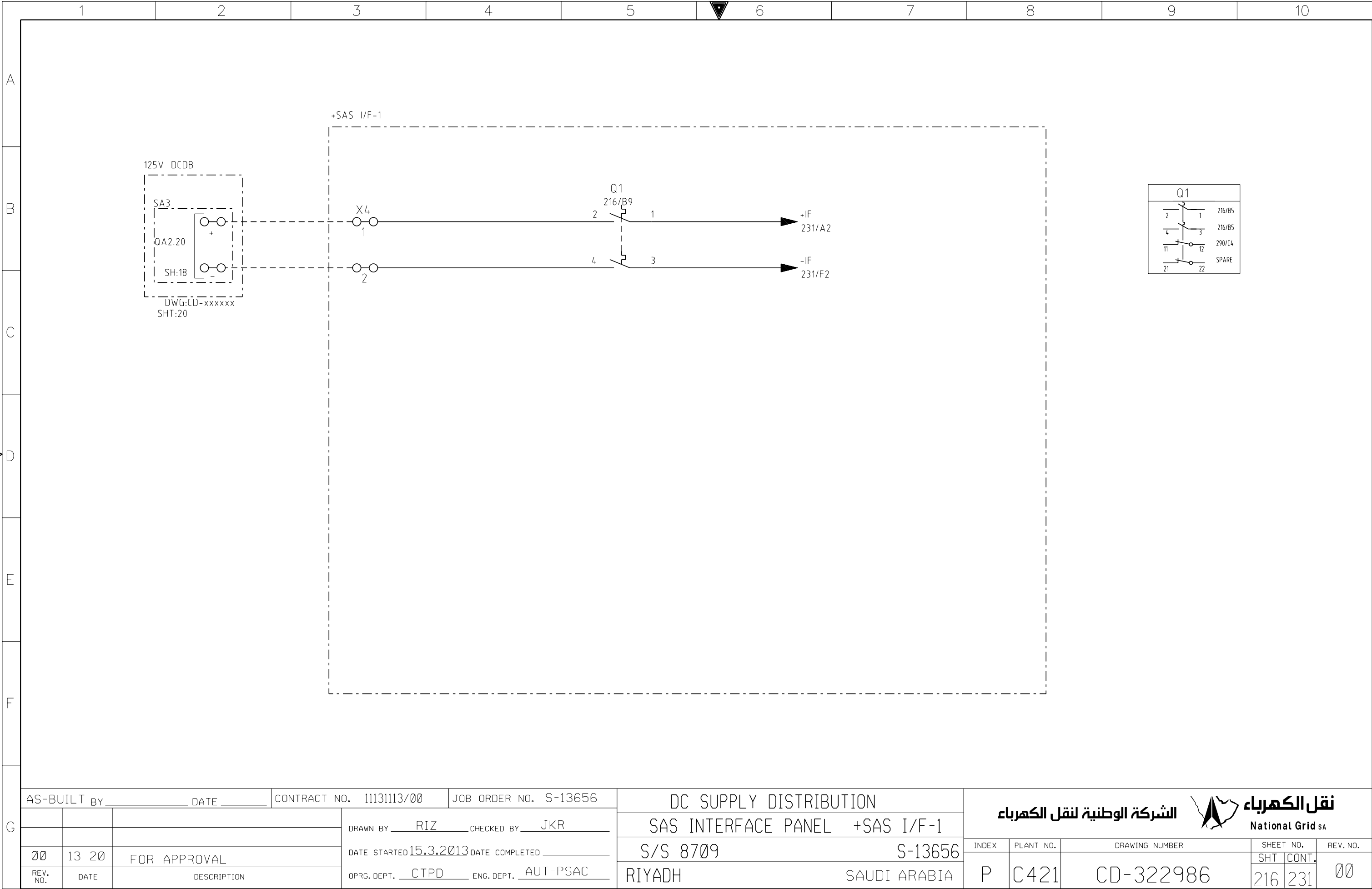
COMMON LEGENDS	
SAS INTERFACE PANEL	+SAS I/F-1
S/S 8709	S-13656
RIYADH	SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء		نقل الكهرباء		National Grid sa	
INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.	
P	C421	CD-322986	SHT 013	CONT. 014	00





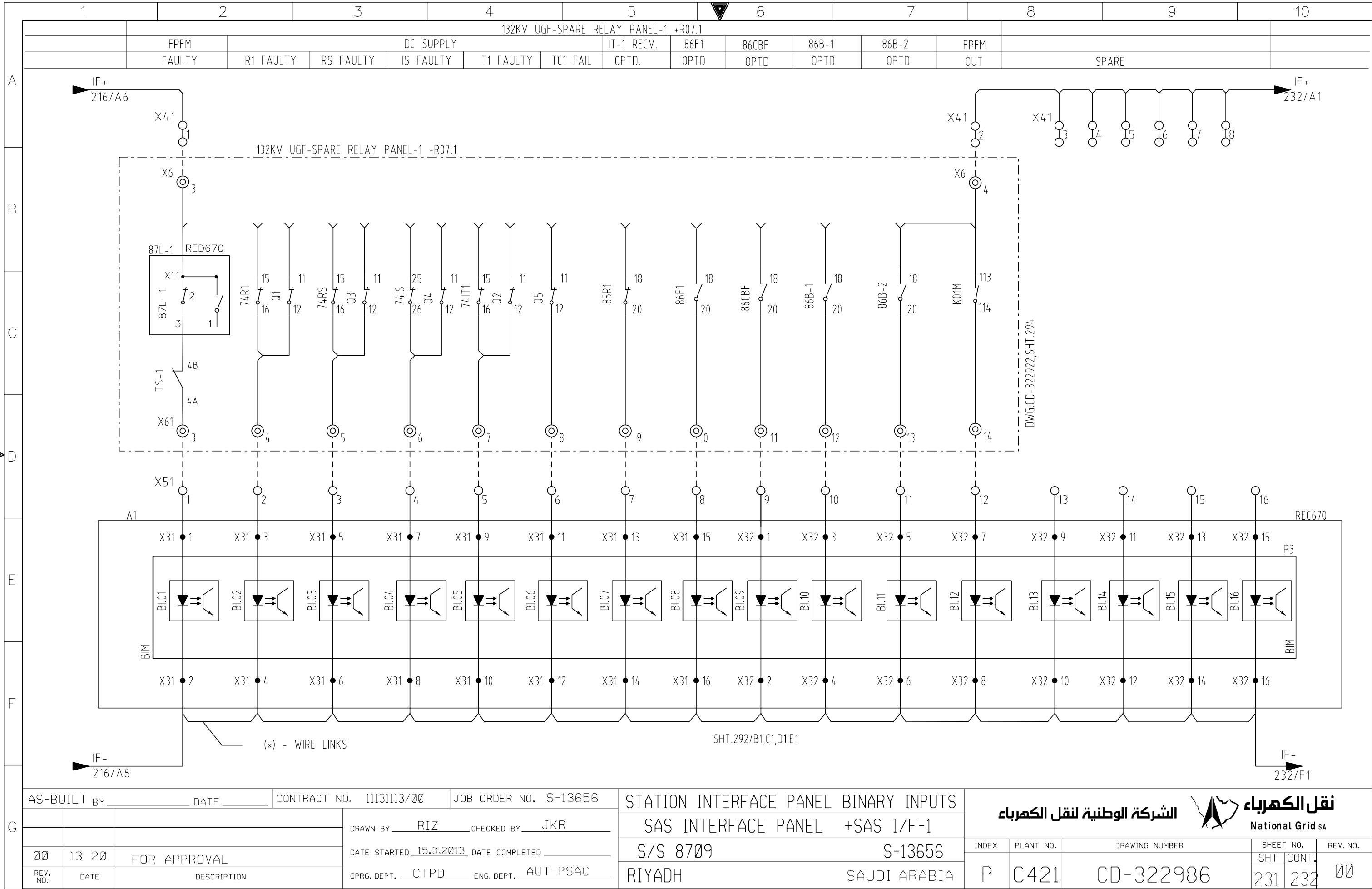


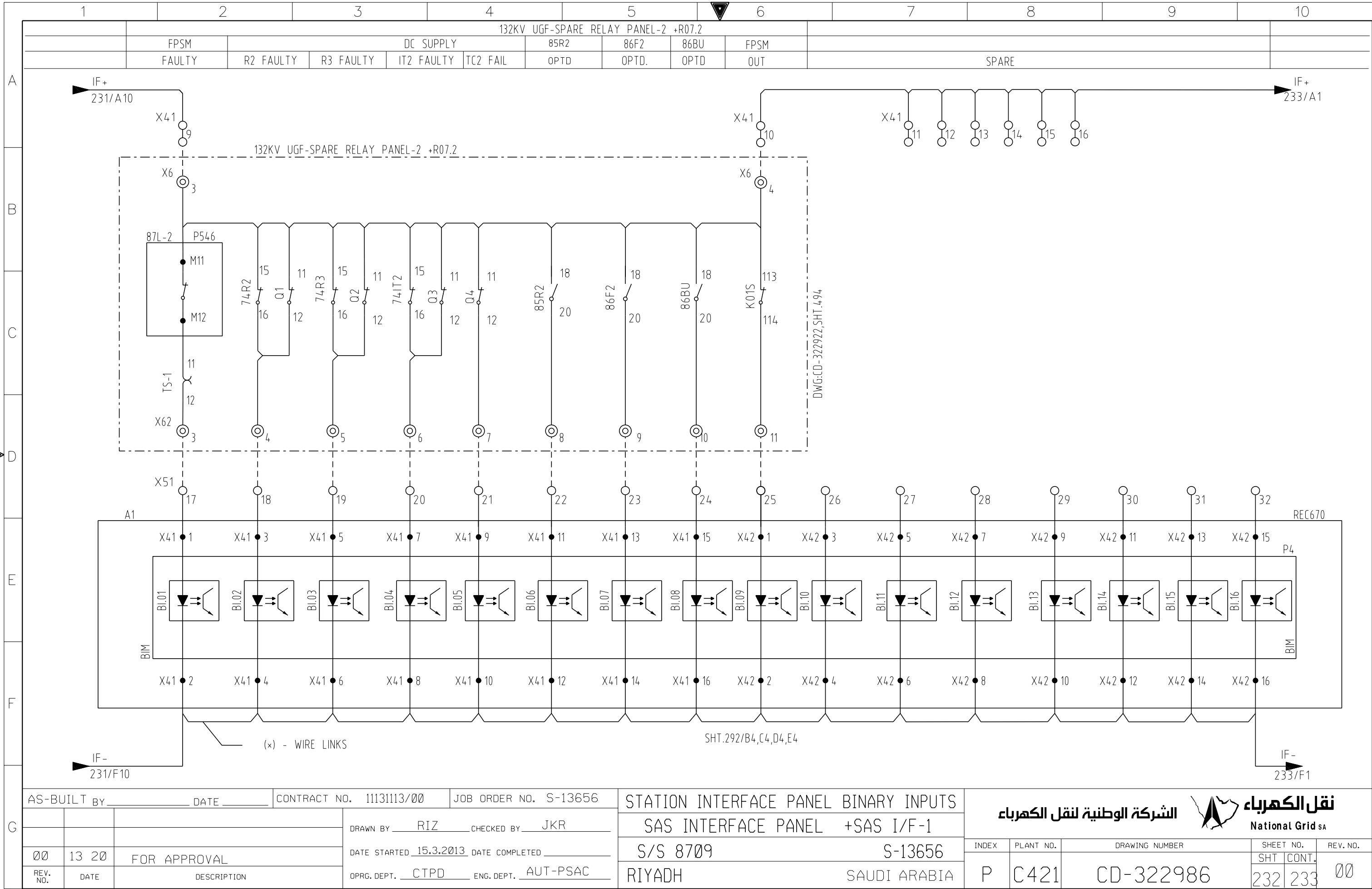


AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		DC SUPPLY DISTRIBUTION		<div>الشركة الوطنية لنقل الكهرباء</div> <div>نقل الكهرباء</div> <div>National Grid sa</div>						
			DRAWN BY RIZ		CHECKED BY JKR		SAS INTERFACE PANEL +SAS I/F-1								
00	13 20	FOR APPROVAL	DATE STARTED 15.3.2013		DATE COMPLETED _____		S/S 8709	S-13656	INDEX	PLANT NO.	DRAWING NUMBER		SHEET NO.		REV. NO.
REV. NO.	DATE	DESCRIPTION	OPRG. DEPT. CTPD		ENG. DEPT. AUT-PSAC		RIYADH	SAUDI ARABIA	P	C421	CD-322986		SHT 216	CONT. 231	00

NG/D2-D (2012/01)

DMS VECTOR NGD200





AS-BUILT BY _____ DATE _____ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656

DRAWN BY RIZ CHECKED BY JKR

DATE STARTED 15.3.2013 DATE COMPLETED _____

OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC

STATION INTERFACE PANEL BINARY INPUTS

SAS INTERFACE PANEL +SAS I/F-1

S/S 8709

S-13656

RIYADH

SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء



نقل الكهرباء
National Grid sa

INDEX

PLANT NO.

DRAWING NUMBER

SHEET NO.

REV. NO.

P

C421

CD-322986

232

233

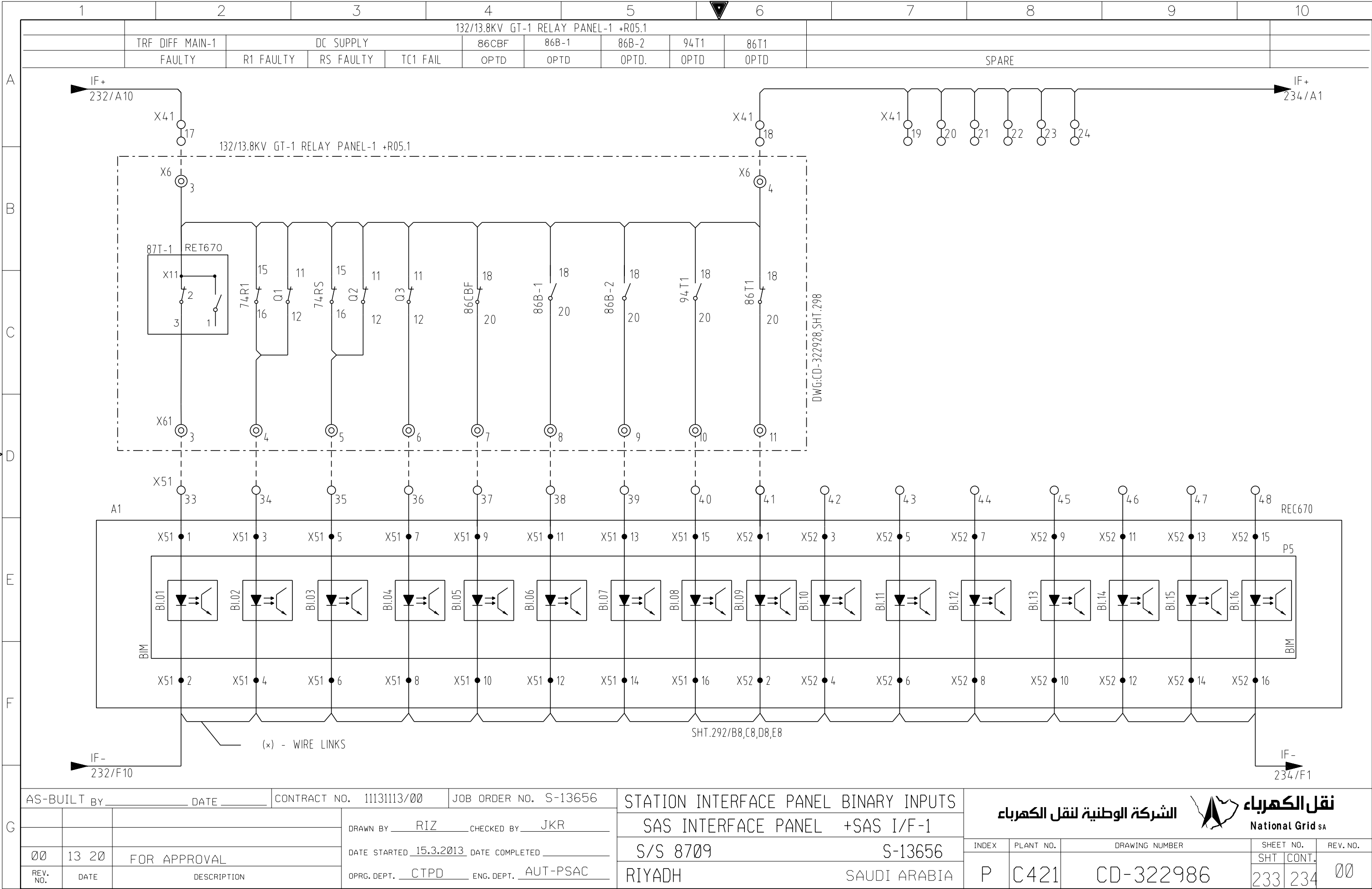
00

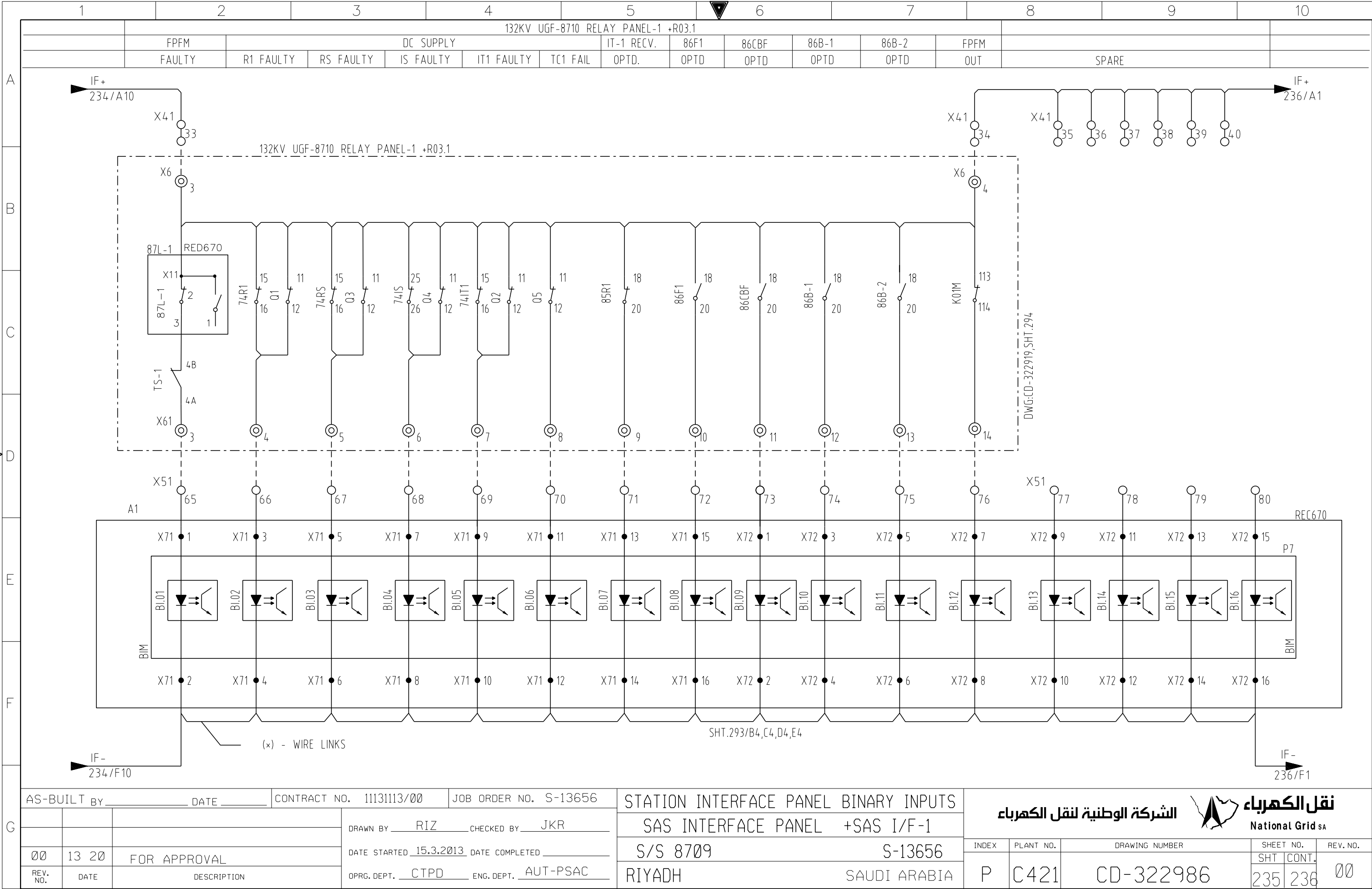
NG/D2-D (2012/01)

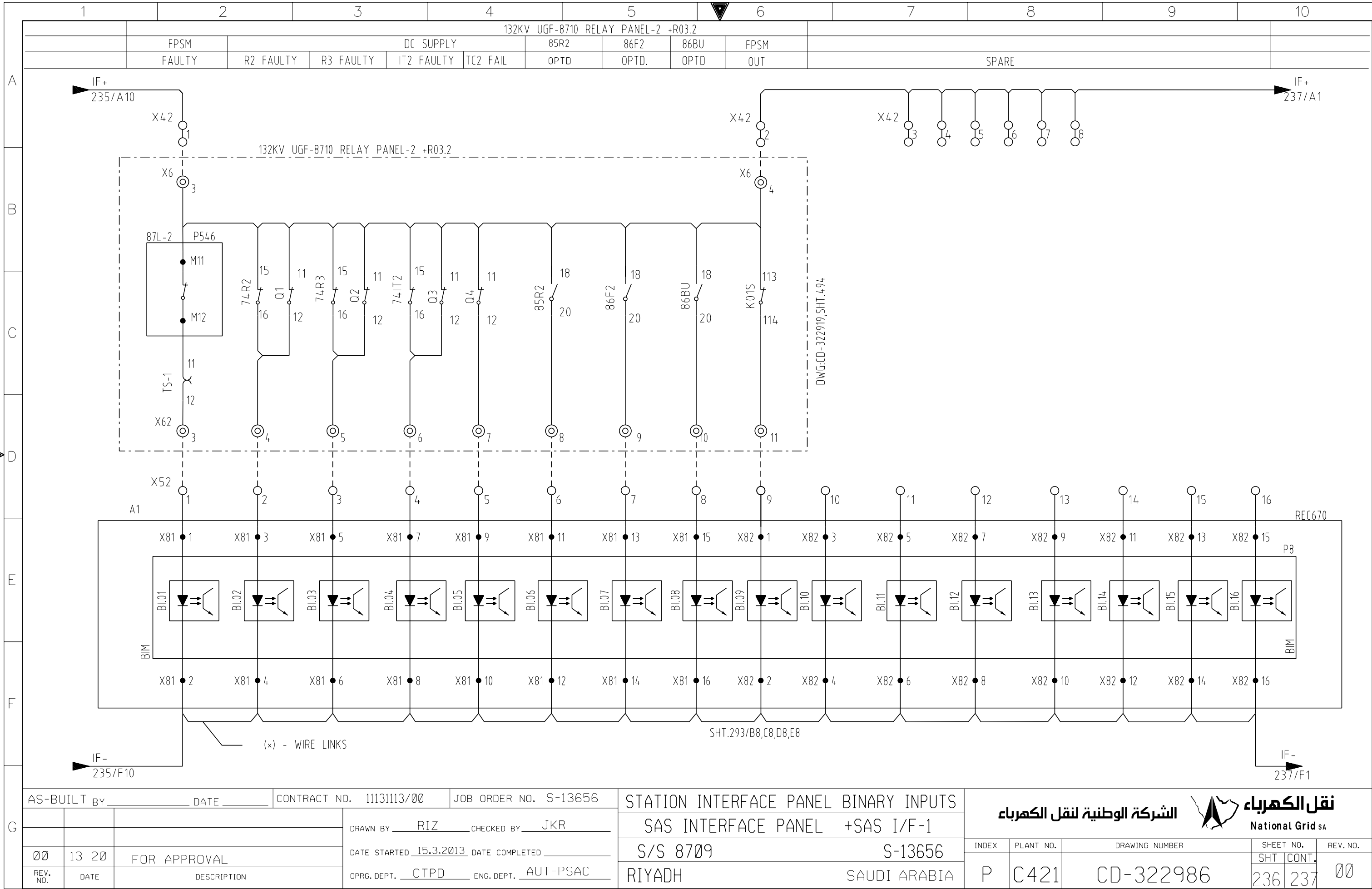
DMS

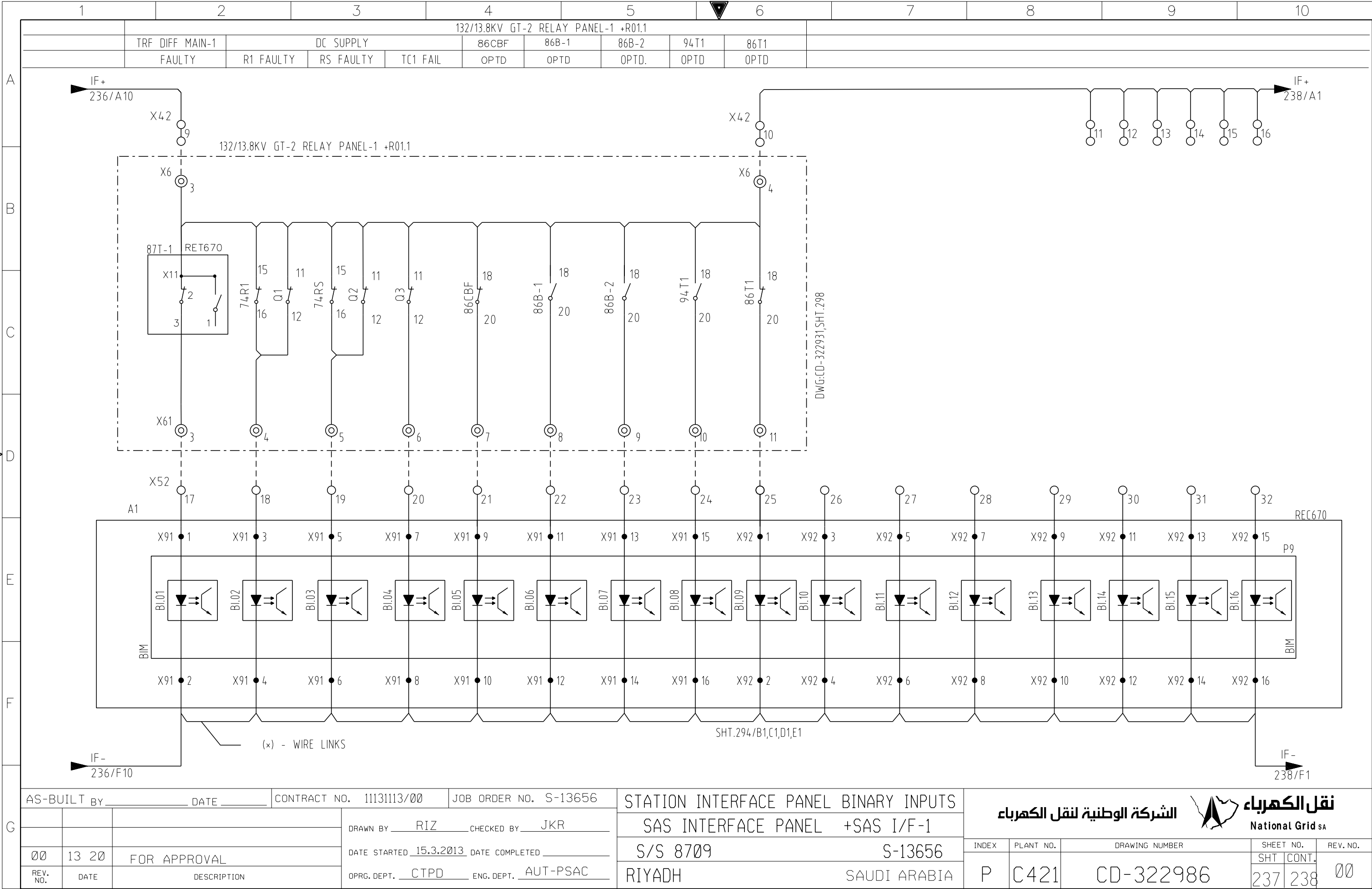
VECTOR

NGD200









AS-BUILT BY _____ DATE _____ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656

DRAWN BY RIZ CHECKED BY JKR

DATE STARTED 15.3.2013 DATE COMPLETED _____

OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC

STATION INTERFACE PANEL BINARY INPUTS

SAS INTERFACE PANEL +SAS I/F-1

S/S 8709

S-13656

RIYADH

SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء



National Grid sa

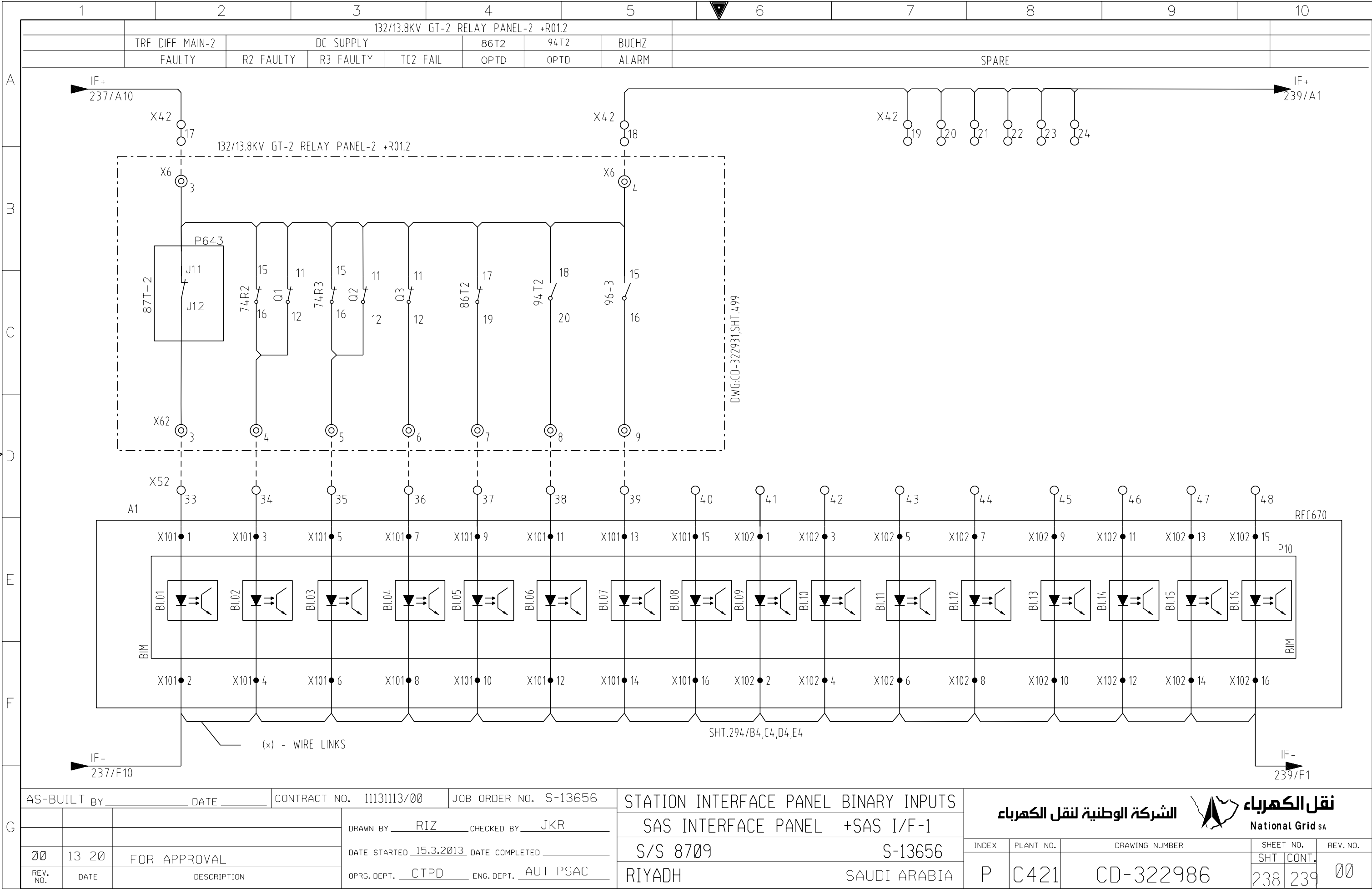
INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
P	C421	CD-322986	SHT 237	CONT. 238
				00

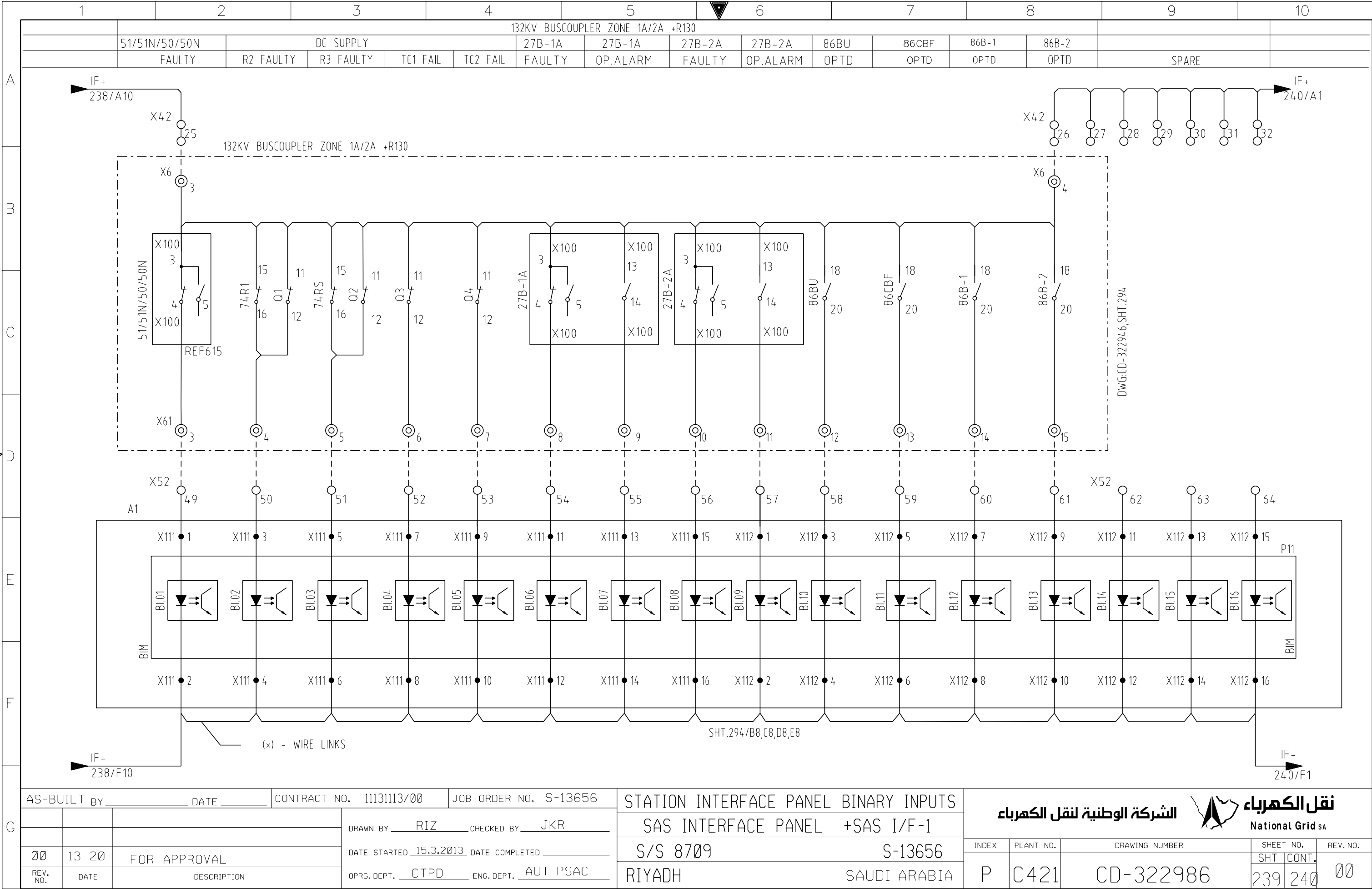
NG/D2-D (2012/01)

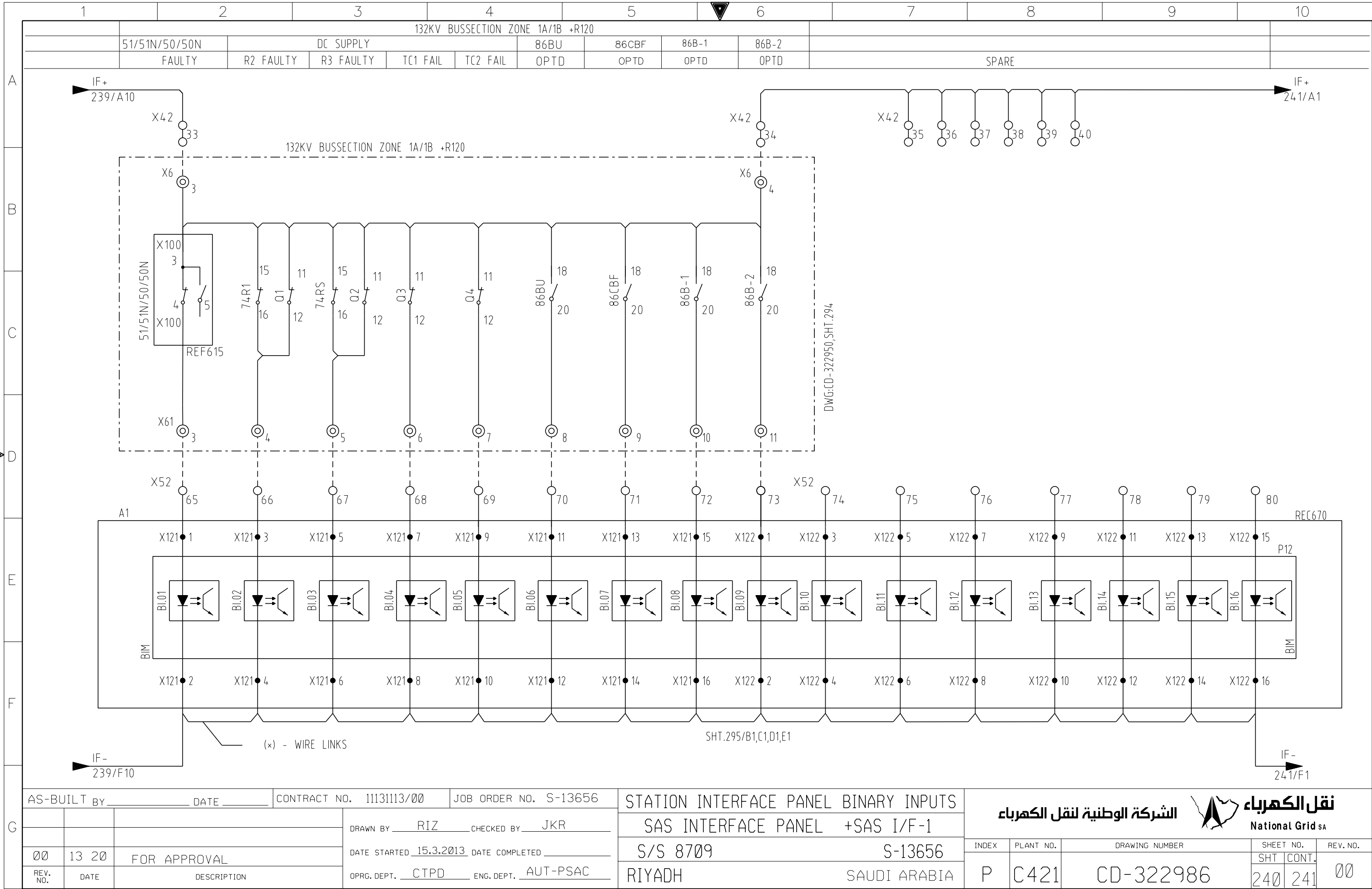
DMS

VECTOR

NGD200







AS-BUILT BY _____ DATE _____ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656

DRAWN BY RIZ CHECKED BY JKR

DATE STARTED 15.3.2013 DATE COMPLETED _____

OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC

STATION INTERFACE PANEL BINARY INPUTS

SAS INTERFACE PANEL +SAS I/F-1

S/S 8709

S-13656

RIYADH

SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء



نقل الكهرباء
National Grid sa

INDEX

PLANT NO.

DRAWING NUMBER

SHEET NO.

REV. NO.

P

C421

CD-322986

240

241

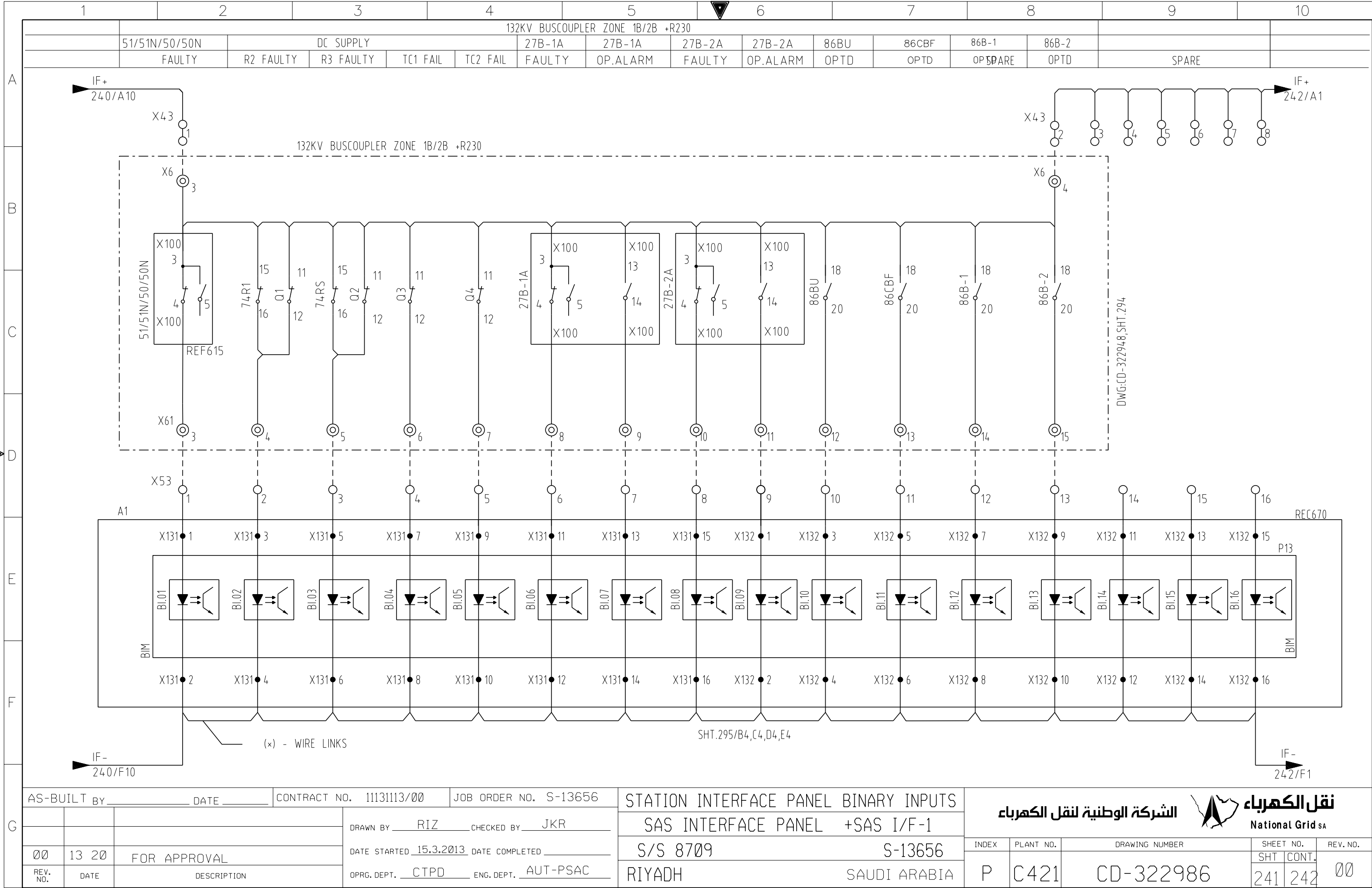
00

NG/D2-D (2012/01)

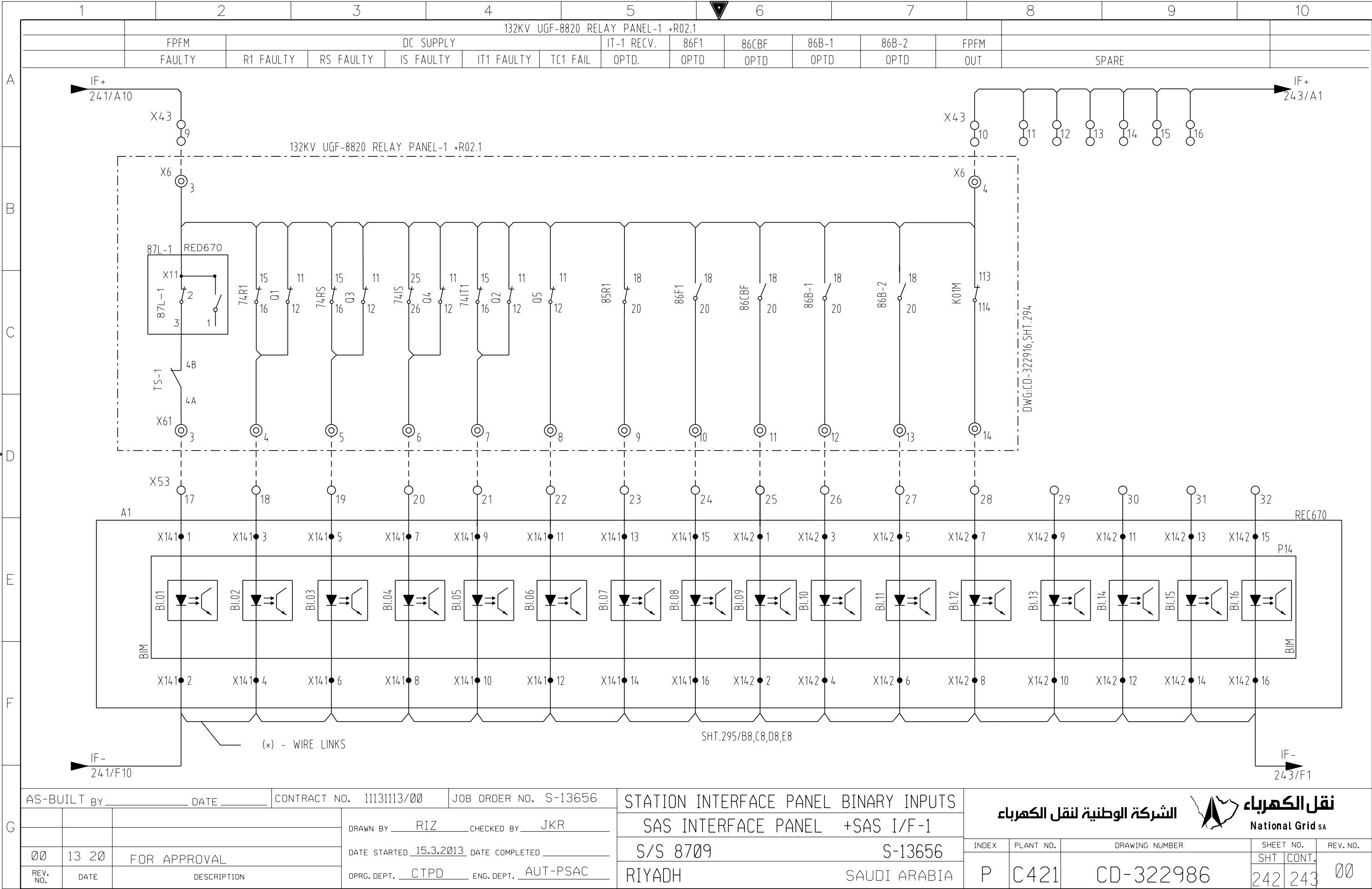
DMS

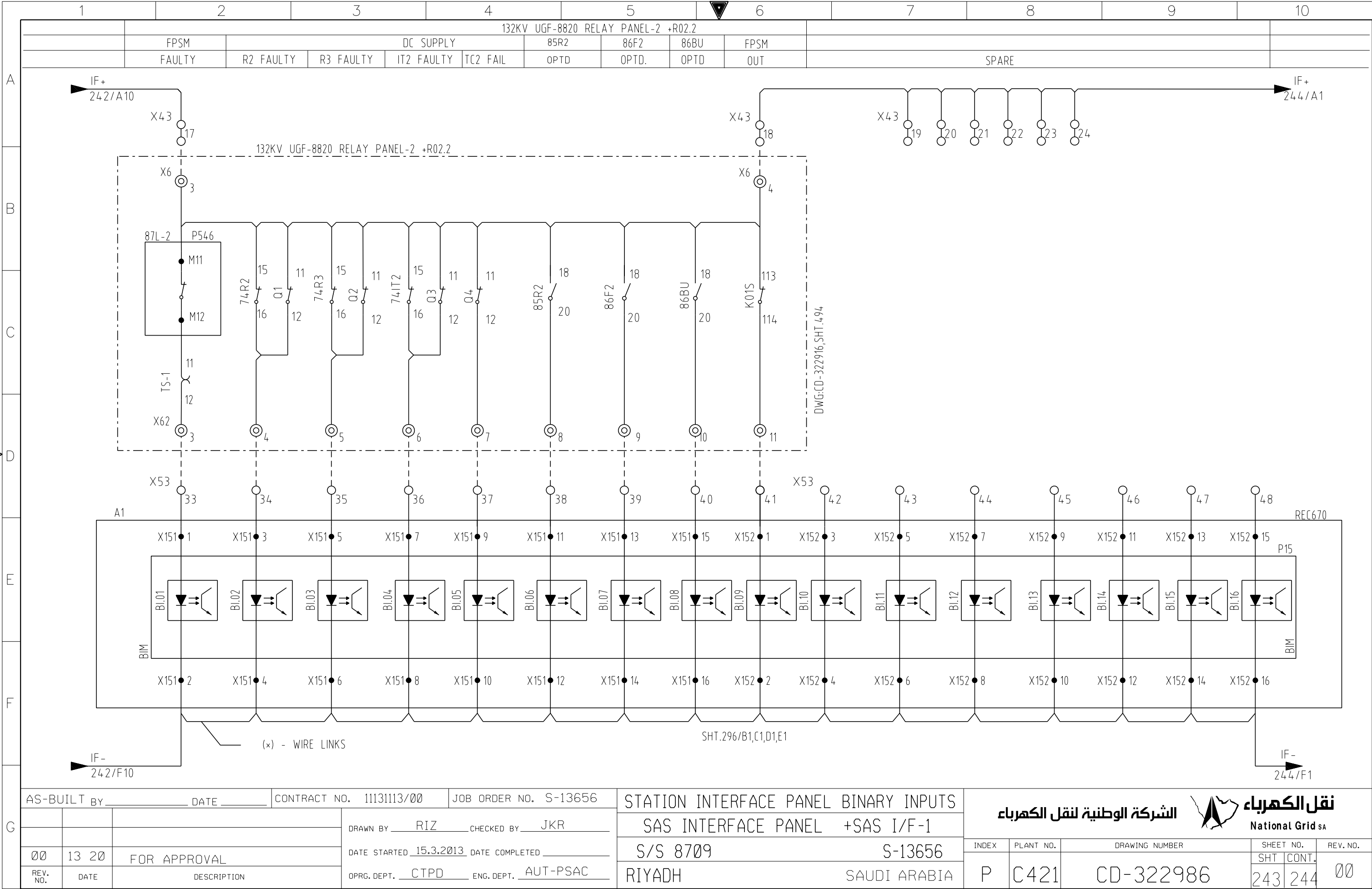
VECTOR

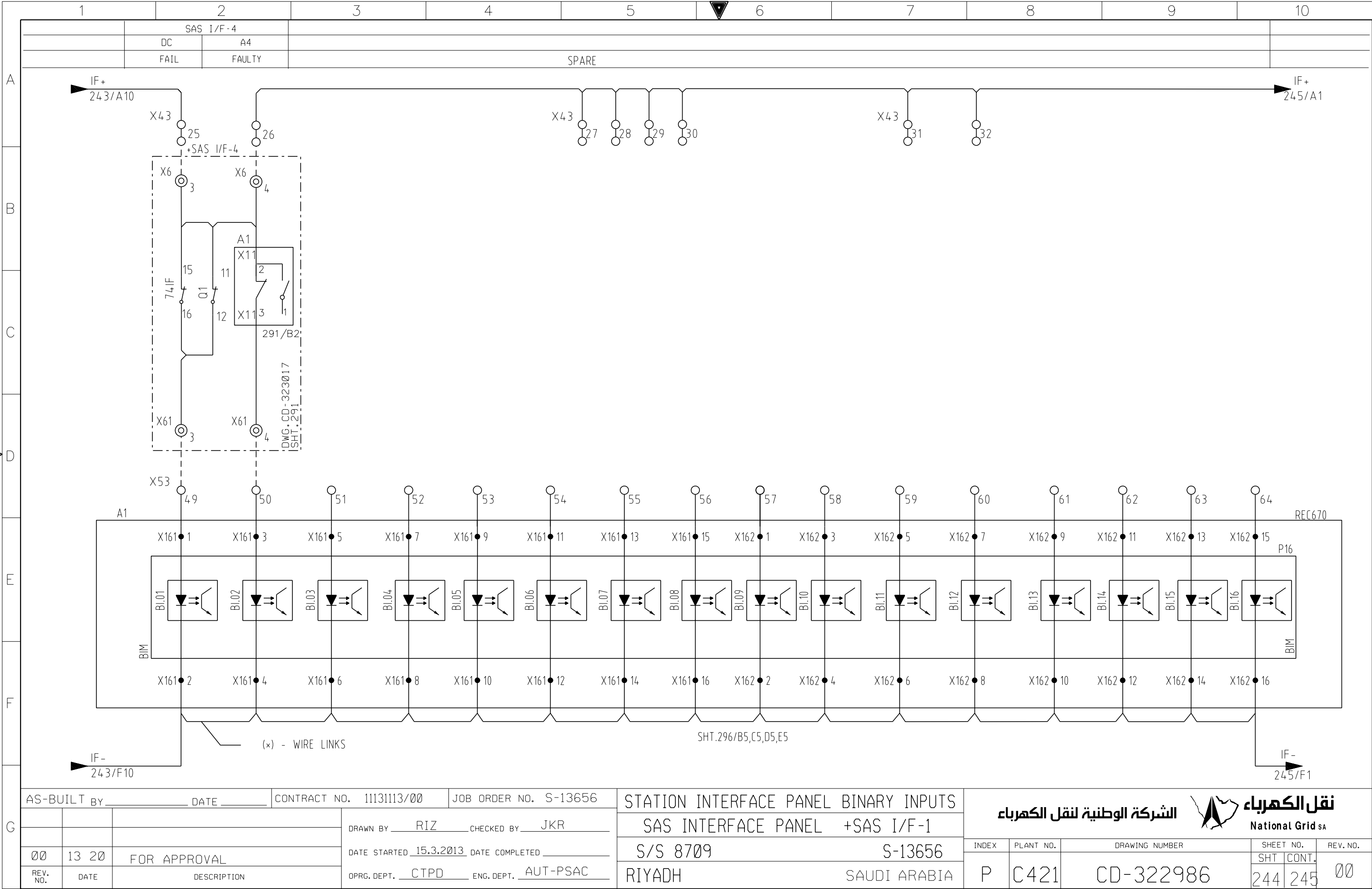
NGD200

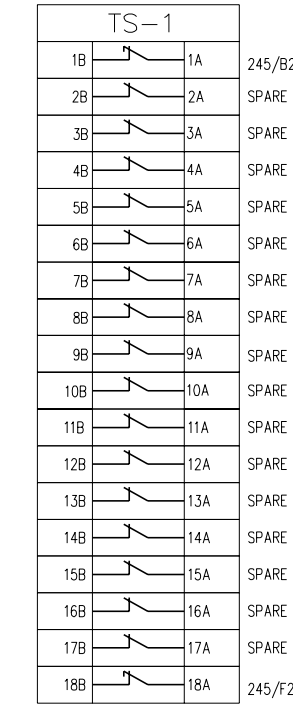


THIS DRAWING AND THE INFORMATION CONTAINED HEREIN ARE THE SOLE PROPERTY OF NATIONAL GRID SA NO REPRODUCTION IN FULL OR IN PART SHALL BE OBTAINED WITHOUT THE WRITTEN CONSENT OF ITS OWNER.

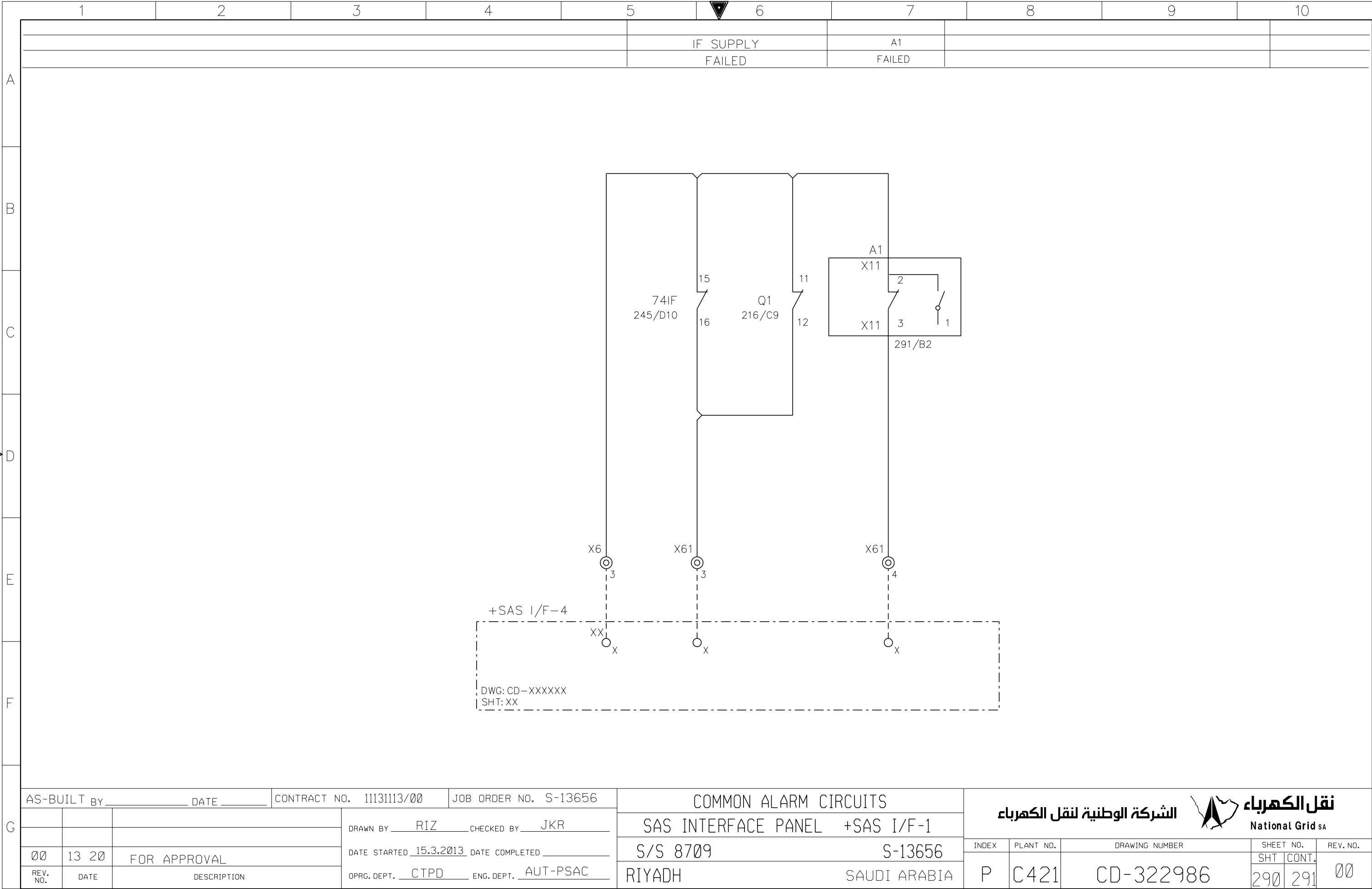








741F	
	245/E7 SPARE 290/D4 SPARE
SPARE	
	SPARE SPARE SPARE SPARE



A

B

C

D

E

F

G

1

2

3

4

5

6

7

8

9

10

A1

BIM P3
REC670

LOCATION=P3

PLANT ADAPTED CONFIGURATION

SHT.231/D1 TO D10

+ - - - X31

1 BI.01 //

- - - 2 BI.02 //

+ - - 3 BI.03 //

- - - 4 BI.04 //

+ - - 5 BI.05 //

- - - 6 BI.06 //

+ - - 7 BI.07 //

- - - 8 BI.08 //

+ - - 9 BI.09 //

- - - 10 BI.10 //

+ - - 11 BI.11 //

- - - 12 BI.12 //

+ - - 13 BI.13 //

- - - 14 BI.14 //

+ - - 15 BI.15 //

- - - 16 BI.16 //

A1

BIM P4
REC670

LOCATION=P4

PLANT ADAPTED CONFIGURATION

SHT.232/D1 TO D10

+ - - - X41

1 BI.01 //

- - - 2 BI.02 //

+ - - 3 BI.03 //

- - - 4 BI.04 //

+ - - 5 BI.05 //

- - - 6 BI.06 //

+ - - 7 BI.07 //

- - - 8 BI.08 //

+ - - 9 BI.09 //

- - - 10 BI.10 //

+ - - 11 BI.11 //

- - - 12 BI.12 //

+ - - 13 BI.13 //

- - - 14 BI.14 //

+ - - 15 BI.15 //

- - - 16 BI.16 //

A1

BIM P5
REC670

LOCATION=P5

PLANT ADAPTED CONFIGURATION

SHT.233/D1 TO D10

+ - - - X51

1 BI.01 //

- - - 2 BI.02 //

+ - - 3 BI.03 //

- - - 4 BI.04 //

+ - - 5 BI.05 //

- - - 6 BI.06 //

+ - - 7 BI.07 //

- - - 8 BI.08 //

+ - - 9 BI.09 //

- - - 10 BI.10 //

+ - - 11 BI.11 //

- - - 12 BI.12 //

+ - - 13 BI.13 //

- - - 14 BI.14 //

+ - - 15 BI.15 //

- - - 16 BI.16 //

AS-BUILT BY _____ DATE _____ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656

DRAWN BY RIZ CHECKED BY JKR

DATE STARTED 15.3.2013 DATE COMPLETED _____

OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC

BLOCK REFERENCE

SAS INTERFACE PANEL +SAS I/F-1

S/S 8709 S-13656

RIYADH SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء

National Grid sa

INDEX PLANT NO. DRAWING NUMBER SHEET NO. REV. NO.

P C421 CD-322986 292 293 00

NG/D2-D (2012/01)

DMS VECTOR NGD200

<

	1	2	3	4	5	6	7	8	9	10
A	A1									
BINARY INPUT CARD										
B	A1BIM P9REC670LOCATION=P9PLANT ADAPTED CONFIGURATION									
C	+ --- X91									
	- --- 1BI.01//									
	+ --- 2BI.02//									
	- --- 3BI.03//									
	+ --- 4BI.04//									
	- --- 5BI.05//									
	+ --- 6BI.06//									
	- --- 7BI.07//									
	+ --- 8BI.08//									
	- --- 9BI.09//									
	+ --- 10BI.10//									
	- --- 11BI.11//									
	+ --- 12BI.12//									
	- --- 13BI.13//									
	+ --- 14BI.14//									
	- --- 15BI.15//									
	+ --- 16BI.16//									
	- --- 16									
	+ --- X92									
	- --- 1BI.09//									
	+ --- 2BI.10//									
	- --- 3BI.11//									
	+ --- 4BI.12//									
	- --- 5BI.13//									
	+ --- 6BI.14//									
	- --- 7BI.15//									
	+ --- 8BI.16//									
	- --- 9BI.17//									
	+ --- 10BI.18//									
	- --- 11BI.19//									
	+ --- 12BI.20//									
	- --- 13BI.21//									
+ --- 14BI.22//										
- --- 15BI.23//										
+ --- 16BI.24//										
- --- 16										
D	SHT.237/D1 TO D10									
E	A1BIM P10REC670LOCATION=P10PLANT ADAPTED CONFIGURATION									
F	+ --- X101									
	- --- 1BI.01//									
	+ --- 2BI.02//									
	- --- 3BI.03//									
	+ --- 4BI.04//									
	- --- 5BI.05//									
	+ --- 6BI.06//									
	- --- 7BI.07//									
	+ --- 8BI.08//									
	- --- 9BI.09//									
	+ --- 10BI.10//									
	- --- 11BI.11//									
	+ --- 12BI.12//									
	- --- 13BI.13//									
	+ --- 14BI.14//									
	- --- 15BI.15//									
	+ --- 16BI.16//									
	- --- 16									
	+ --- X102									
	- --- 1BI.09//									
	+ --- 2BI.10//									
	- --- 3BI.11//									
	+ --- 4BI.12//									
	- --- 5BI.13//									
	+ --- 6BI.14//									
	- --- 7BI.15//									
	+ --- 8BI.16//									
	- --- 9BI.17//									
	+ --- 10BI.18//									
	- --- 11BI.19//									
	+ --- 12BI.20//									
	- --- 13BI.21//									
+ --- 14BI.22//										
- --- 15BI.23//										
+ --- 16BI.24//										
- --- 16										
SHT.238/D1 TO D10										
G	A1BIM P11REC670LOCATION=P11PLANT ADAPTED CONFIGURATION									
	+ --- X111									
	- --- 1BI.01//									
	+ --- 2BI.02//									
	- --- 3BI.03//									
	+ --- 4BI.04//									
	- --- 5BI.05//									
	+ --- 6BI.06//									
	- --- 7BI.07//									
	+ --- 8BI.08//									
	- --- 9BI.09//									
	+ --- 10BI.10//									
	- --- 11BI.11//									
	+ --- 12BI.12//									
	- --- 13BI.13//									
	+ --- 14BI.14//									
	- --- 15BI.15//									
	+ --- 16BI.16//									
	- --- 16									
	+ --- X112									
	- --- 1BI.09//									
	+ --- 2BI.10//									
	- --- 3BI.11//									
	+ --- 4BI.12//									
	- --- 5BI.13//									
	+ --- 6BI.14//									
	- --- 7BI.15//									
	+ --- 8BI.16//									
	- --- 9BI.17//									
	+ --- 10BI.18//									
	- --- 11BI.19//									
	+ --- 12BI.20//									
	- --- 13BI.21//									
+ --- 14BI.22//										
- --- 15BI.23//										
+ --- 16BI.24//										
- --- 16										
SHT.239/D1 TO D10										
AS-BUILT BY _____ DATE _____ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656										
BLOCK REFERENCE										
SAS INTERFACE PANEL +SAS I/F-1										
S/S 8709 S-13656										
RIYADH SAUDI ARABIA										
الشركة الوطنية لنقل الكهرباءNational Grid sa										
INDEX PLANT NO. DRAWING NUMBER SHEET NO. REV. NO.										
P C421 CD-322986 294 295 00										
NG/D2-D (2012/01)										
DMS VECTOR NGD200										

	1	2	3	4	5	6	7	8	9	10
A	A1									
	BINARY INPUT CARD									
B	A1BIM P12REC670LOCATION=P12PLANT ADAPTED CONFIGURATION									
C	+ --- X121									
	- --- 1BI.01//									
	+ --- 2BI.02//									
	- --- 3BI.03//									
	+ --- 4BI.04//									
	- --- 5BI.05//									
	+ --- 6BI.06//									
	- --- 7BI.07//									
	+ --- 8BI.08//									
	- --- 9BI.09//									
	+ --- 10BI.10//									
	- --- 11BI.11//									
	+ --- 12BI.12//									
	- --- 13BI.13//									
	+ --- 14BI.14//									
	D	SHT.240/D1 TO D10								
E	+ --- X122									
	- --- 1BI.09//									
	+ --- 2BI.10//									
	- --- 3BI.11//									
	+ --- 4BI.12//									
	- --- 5BI.13//									
	+ --- 6BI.14//									
	- --- 7BI.15//									
	+ --- 8BI.16//									
	- --- 9BI.17//									
	+ --- 10BI.18//									
	- --- 11BI.19//									
	+ --- 12BI.20//									
	- --- 13BI.21//									
	+ --- 14BI.22//									
	- --- 15BI.23//									
+ --- 16BI.24//										
F	SHT.241/D1 TO D10									
G	+ --- X131									
	- --- 1BI.01//									
	+ --- 2BI.02//									
	- --- 3BI.03//									
	+ --- 4BI.04//									
	- --- 5BI.05//									
	+ --- 6BI.06//									
	- --- 7BI.07//									
	+ --- 8BI.08//									
	- --- 9BI.09//									
	+ --- 10BI.10//									
	- --- 11BI.11//									
	+ --- 12BI.12//									
	- --- 13BI.13//									
	+ --- 14BI.14//									
	- --- 15BI.15//									
+ --- 16BI.16//										
H	+ --- X132									
	- --- 1BI.09//									
	+ --- 2BI.10//									
	- --- 3BI.11//									
	+ --- 4BI.12//									
	- --- 5BI.13//									
	+ --- 6BI.14//									
	- --- 7BI.15//									
	+ --- 8BI.16//									
	- --- 9BI.17//									
	+ --- 10BI.18//									
	- --- 11BI.19//									
	+ --- 12BI.20//									
	- --- 13BI.21//									
	+ --- 14BI.22//									
	- --- 15BI.23//									
+ --- 16BI.24//										
I	+ --- X141									
	- --- 1BI.01//									
	+ --- 2BI.02//									
	- --- 3BI.03//									
	+ --- 4BI.04//									
	- --- 5BI.05//									
	+ --- 6BI.06//									
	- --- 7BI.07//									
	+ --- 8BI.08//									
	- --- 9BI.09//									
	+ --- 10BI.10//									
	- --- 11BI.11//									
	+ --- 12BI.12//									
	- --- 13BI.13//									
	+ --- 14BI.14//									
	- --- 15BI.15//									
+ --- 16BI.16//										
J	+ --- X142									
	- --- 1BI.09//									
	+ --- 2BI.10//									
	- --- 3BI.11//									
	+ --- 4BI.12//									
	- --- 5BI.13//									
	+ --- 6BI.14//									
	- --- 7BI.15//									
	+ --- 8BI.16//									
	- --- 9BI.17//									
	+ --- 10BI.18//									
	- --- 11BI.19//									
	+ --- 12BI.20//									
	- --- 13BI.21//									
	+ --- 14BI.22//									
	- --- 15BI.23//									
+ --- 16BI.24//										
SHT.242/D1 TO D10										
A1BIM P13REC670LOCATION=P13PLANT ADAPTED CONFIGURATION										
A1BIM P14REC670LOCATION=P14PLANT ADAPTED CONFIGURATION										
AS-BUILT BY _____ DATE _____ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656										
BLOCK REFERENCE										
SAS INTERFACE PANEL +SAS I/F-1										
S/S 8709 S-13656										
RIYADH SAUDI ARABIA										
الشركة الوطنية لنقل الكهرباءNational Grid sa										
INDEX PLANT NO. DRAWING NUMBER SHEET NO. REV. NO.										
P C421 CD-322986 295 296 00										
NG/D2-D (2012/01)										
DMS VECTOR NGD200										

	1	2	3	4	5	6	7	8	9	10																																																																																																												
A	A1																																																																																																																					
	BINARY INPUT CARD																																																																																																																					
B	A1BIM P15REC670LOCATION=P15PLANT ADAPTED CONFIGURATION																																																																																																																					
	C																																																																																																																					
C	SHT.243/D1 TO D10																																																																																																																					
D	SHT.244/D1 TO D10																																																																																																																					
E	A1BIM P16REC670LOCATION=P16PLANT ADAPTED CONFIGURATION																																																																																																																					
F	SHT.244/D1 TO D10																																																																																																																					
G	<table><tr><td colspan="3">AS-BUILT BY _____ DATE _____</td><td colspan="2">CONTRACT NO. 11131113/00</td><td colspan="2">JOB ORDER NO. S-13656</td><td colspan="3">BLOCK REFERENCE</td><td colspan="2"><div>الشركة الوطنية لنقل الكهرباء</div><div>National Grid sa</div></td></tr><tr><td></td><td></td><td></td><td colspan="2">DRAWN BY RIZ</td><td colspan="2">CHECKED BY JKR</td><td colspan="3">SAS INTERFACE PANEL +SAS I/F-1</td><td colspan="2">INDEX</td></tr><tr><td></td><td></td><td></td><td colspan="2">DATE STARTED 15.3.2013</td><td colspan="2">DATE COMPLETED</td><td colspan="3">S/S 8709 S-13656</td><td colspan="2">PLANT NO.</td></tr><tr><td></td><td></td><td></td><td colspan="2">OPRG. DEPT. CTPD</td><td colspan="2">ENG. DEPT. AUT-PSAC</td><td colspan="3">RIYADH SAUDI ARABIA</td><td colspan="2">DRAWING NUMBER</td></tr><tr><td></td><td>00</td><td>13 20</td><td colspan="2">FOR APPROVAL</td><td colspan="2"></td><td colspan="3"></td><td colspan="2">SHEET NO.</td></tr><tr><td></td><td>REV. NO.</td><td>DATE</td><td colspan="2">DESCRIPTION</td><td colspan="2"></td><td colspan="3"></td><td colspan="2">SHT</td></tr><tr><td></td><td></td><td></td><td colspan="2"></td><td colspan="2"></td><td colspan="3"></td><td colspan="2">CONT.</td></tr><tr><td></td><td></td><td></td><td colspan="2"></td><td colspan="2"></td><td colspan="3"></td><td colspan="2">REV. NO.</td></tr><tr><td></td><td></td><td></td><td colspan="2"></td><td colspan="2"></td><td colspan="3"></td><td colspan="2">00</td></tr></table>										AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		BLOCK REFERENCE			<div>الشركة الوطنية لنقل الكهرباء</div> <div>National Grid sa</div>					DRAWN BY RIZ		CHECKED BY JKR		SAS INTERFACE PANEL +SAS I/F-1			INDEX					DATE STARTED 15.3.2013		DATE COMPLETED		S/S 8709 S-13656			PLANT NO.					OPRG. DEPT. CTPD		ENG. DEPT. AUT-PSAC		RIYADH SAUDI ARABIA			DRAWING NUMBER			00	13 20	FOR APPROVAL							SHEET NO.			REV. NO.	DATE	DESCRIPTION							SHT												CONT.												REV. NO.												00	
AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		BLOCK REFERENCE			<div>الشركة الوطنية لنقل الكهرباء</div> <div>National Grid sa</div>																																																																																																												
			DRAWN BY RIZ		CHECKED BY JKR		SAS INTERFACE PANEL +SAS I/F-1			INDEX																																																																																																												
			DATE STARTED 15.3.2013		DATE COMPLETED		S/S 8709 S-13656			PLANT NO.																																																																																																												
			OPRG. DEPT. CTPD		ENG. DEPT. AUT-PSAC		RIYADH SAUDI ARABIA			DRAWING NUMBER																																																																																																												
	00	13 20	FOR APPROVAL							SHEET NO.																																																																																																												
	REV. NO.	DATE	DESCRIPTION							SHT																																																																																																												
										CONT.																																																																																																												
										REV. NO.																																																																																																												
										00																																																																																																												

	1	2	3	4	5	6	7	8	9	10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
A	<table><tr><th>INTERNAL REFERENCE</th><th>X3 AC CKT.</th></tr><tr><td>211/A3</td><td>1</td></tr><tr><td>211/B3</td><td>2</td></tr><tr><td>211/A3</td><td>3</td></tr><tr><td>211/B3</td><td>4</td></tr><tr><td>211/B3</td><td>5</td></tr><tr><td>211/C3</td><td>6</td></tr><tr><td>211/B3</td><td>7</td></tr><tr><td>211/C3</td><td>8</td></tr><tr><td>SPARE</td><td>9</td></tr><tr><td>SPARE</td><td>10</td></tr></table>	INTERNAL REFERENCE	X3 AC CKT.	211/A3	1	211/B3	2	211/A3	3	211/B3	4	211/B3	5	211/C3	6	211/B3	7	211/C3	8	SPARE	9	SPARE	10	<table><tr><th>INTERNAL REFERENCE</th><th>X51 CONTROL & PROTN.</th></tr><tr><td>231/D1</td><td>1</td></tr><tr><td>231/D2</td><td>2</td></tr><tr><td>231/D3</td><td>3</td></tr><tr><td>231/D4</td><td>4</td></tr><tr><td>231/D4</td><td>5</td></tr><tr><td>231/D5</td><td>6</td></tr><tr><td>231/D5</td><td>7</td></tr><tr><td>231/D5</td><td>8</td></tr><tr><td>231/D6</td><td>9</td></tr><tr><td>231/D6</td><td>10</td></tr><tr><td>231/D7</td><td>11</td></tr><tr><td>231/D8</td><td>12</td></tr><tr><td>231/D8</td><td>13</td></tr><tr><td>231/D9</td><td>14</td></tr><tr><td>231/D9</td><td>15</td></tr><tr><td>231/D10</td><td>16</td></tr><tr><td>232/D2</td><td>17</td></tr><tr><td>232/D2</td><td>18</td></tr><tr><td>232/D3</td><td>19</td></tr><tr><td>232/D3</td><td>20</td></tr><tr><td>232/D4</td><td>21</td></tr><tr><td>232/D4</td><td>22</td></tr><tr><td>232/D5</td><td>23</td></tr><tr><td>232/D5</td><td>24</td></tr><tr><td>232/D6</td><td>25</td></tr><tr><td>232/D6</td><td>26</td></tr><tr><td>232/D7</td><td>27</td></tr><tr><td>232/D8</td><td>28</td></tr><tr><td>232/D8</td><td>29</td></tr><tr><td>232/D9</td><td>30</td></tr><tr><td>232/D9</td><td>31</td></tr><tr><td>232/D10</td><td>32</td></tr><tr><td>233/D2</td><td>33</td></tr><tr><td>233/D2</td><td>34</td></tr><tr><td>233/D3</td><td>35</td></tr><tr><td>233/D3</td><td>36</td></tr><tr><td>233/D4</td><td>37</td></tr><tr><td>233/D4</td><td>38</td></tr><tr><td>233/D5</td><td>39</td></tr><tr><td>233/D5</td><td>40</td></tr><tr><td>233/D6</td><td>41</td></tr><tr><td>233/D6</td><td>42</td></tr><tr><td>233/D7</td><td>43</td></tr><tr><td>233/D8</td><td>44</td></tr><tr><td>233/D8</td><td>45</td></tr><tr><td>233/D9</td><td>46</td></tr><tr><td>233/D9</td><td>47</td></tr><tr><td>233/D10</td><td>48</td></tr><tr><td>234/D2</td><td>49</td></tr><tr><td>234/D2</td><td>50</td></tr></table>	INTERNAL REFERENCE	X51 CONTROL & PROTN.	231/D1	1	231/D2	2	231/D3	3	231/D4	4	231/D4	5	231/D5	6	231/D5	7	231/D5	8	231/D6	9	231/D6	10	231/D7	11	231/D8	12	231/D8	13	231/D9	14	231/D9	15	231/D10	16	232/D2	17	232/D2	18	232/D3	19	232/D3	20	232/D4	21	232/D4	22	232/D5	23	232/D5	24	232/D6	25	232/D6	26	232/D7	27	232/D8	28	232/D8	29	232/D9	30	232/D9	31	232/D10	32	233/D2	33	233/D2	34	233/D3	35	233/D3	36	233/D4	37	233/D4	38	233/D5	39	233/D5	40	233/D6	41	233/D6	42	233/D7	43	233/D8	44	233/D8	45	233/D9	46	233/D9	47	233/D10	48	234/D2	49	234/D2	50	<table><tr><th>INTERNAL REFERENCE</th><th>X51 CONTROL & PROTN.</th></tr><tr><td>234/D3</td><td>51</td></tr><tr><td>234/D3</td><td>52</td></tr><tr><td>234/D4</td><td>53</td></tr><tr><td>234/D4</td><td>54</td></tr><tr><td>234/D5</td><td>55</td></tr><tr><td>234/D5</td><td>56</td></tr><tr><td>234/D6</td><td>57</td></tr><tr><td>234/D6</td><td>58</td></tr><tr><td>234/D7</td><td>59</td></tr><tr><td>234/D8</td><td>60</td></tr><tr><td>234/D8</td><td>61</td></tr><tr><td>234/D9</td><td>62</td></tr><tr><td>234/D9</td><td>63</td></tr><tr><td>234/D10</td><td>64</td></tr><tr><td>235/D2</td><td>65</td></tr><tr><td>235/D2</td><td>66</td></tr><tr><td>235/D3</td><td>67</td></tr><tr><td>235/D3</td><td>68</td></tr><tr><td>235/D4</td><td>69</td></tr><tr><td>235/D4</td><td>70</td></tr><tr><td>235/D5</td><td>71</td></tr><tr><td>235/D5</td><td>72</td></tr><tr><td>235/D6</td><td>73</td></tr><tr><td>235/D6</td><td>74</td></tr><tr><td>235/D7</td><td>75</td></tr><tr><td>235/D8</td><td>76</td></tr><tr><td>235/D8</td><td>77</td></tr><tr><td>235/D9</td><td>78</td></tr><tr><td>235/D9</td><td>79</td></tr><tr><td>235/D10</td><td>80</td></tr><tr><td>SPARE</td><td>81</td></tr><tr><td>SPARE</td><td>82</td></tr><tr><td>SPARE</td><td>83</td></tr><tr><td>SPARE</td><td>84</td></tr><tr><td>SPARE</td><td>85</td></tr><tr><td>SPARE</td><td>86</td></tr><tr><td>SPARE</td><td>87</td></tr><tr><td>SPARE</td><td>88</td></tr><tr><td>SPARE</td><td>89</td></tr><tr><td>SPARE</td><td>90</td></tr></table>	INTERNAL REFERENCE	X51 CONTROL & PROTN.	234/D3	51	234/D3	52	234/D4	53	234/D4	54	234/D5	55	234/D5	56	234/D6	57	234/D6	58	234/D7	59	234/D8	60	234/D8	61	234/D9	62	234/D9	63	234/D10	64	235/D2	65	235/D2	66	235/D3	67	235/D3	68	235/D4	69	235/D4	70	235/D5	71	235/D5	72	235/D6	73	235/D6	74	235/D7	75	235/D8	76	235/D8	77	235/D9	78	235/D9	79	235/D10	80	SPARE	81	SPARE	82	SPARE	83	SPARE	84	SPARE	85	SPARE	86	SPARE	87	SPARE	88	SPARE	89	SPARE	90	<table><tr><th>INTERNAL REFERENCE</th><th>X41 DC CKTS.</th></tr><tr><td>231/A2</td><td>1</td></tr><tr><td>231/A8</td><td>2</td></tr><tr><td>231/A8</td><td>3</td></tr><tr><td>231/A8</td><td>4</td></tr><tr><td>231/A9</td><td>5</td></tr><tr><td>231/A9</td><td>6</td></tr><tr><td>231/A9</td><td>7</td></tr><tr><td>231/A9</td><td>8</td></tr><tr><td>232/A2</td><td>9</td></tr><tr><td>232/A8</td><td>10</td></tr><tr><td>232/A8</td><td>11</td></tr><tr><td>232/A8</td><td>12</td></tr><tr><td>232/A9</td><td>13</td></tr><tr><td>232/A9</td><td>14</td></tr><tr><td>232/A9</td><td>15</td></tr><tr><td>232/A9</td><td>16</td></tr><tr><td>233/A2</td><td>17</td></tr><tr><td>233/A6</td><td>18</td></tr><tr><td>233/A7</td><td>19</td></tr><tr><td>233/A7</td><td>20</td></tr><tr><td>233/A8</td><td>21</td></tr><tr><td>233/A8</td><td>22</td></tr><tr><td>233/A8</td><td>23</td></tr><tr><td>233/A8</td><td>24</td></tr><tr><td>234/A2</td><td>25</td></tr><tr><td>234/A6</td><td>26</td></tr><tr><td>234/A7</td><td>27</td></tr><tr><td>234/A7</td><td>28</td></tr><tr><td>234/A8</td><td>29</td></tr><tr><td>234/A8</td><td>30</td></tr><tr><td>234/A8</td><td>31</td></tr><tr><td>234/A8</td><td>32</td></tr><tr><td>235/A2</td><td>33</td></tr><tr><td>235/A6</td><td>34</td></tr><tr><td>235/A7</td><td>35</td></tr><tr><td>235/A7</td><td>36</td></tr><tr><td>235/A8</td><td>37</td></tr><tr><td>235/A8</td><td>38</td></tr><tr><td>235/A8</td><td>39</td></tr><tr><td>235/A8</td><td>40</td></tr><tr><td>SPARE</td><td>41</td></tr><tr><td>SPARE</td><td>42</td></tr><tr><td>SPARE</td><td>43</td></tr><tr><td>SPARE</td><td>44</td></tr><tr><td>SPARE</td><td>45</td></tr><tr><td>SPARE</td><td>46</td></tr><tr><td>SPARE</td><td>47</td></tr><tr><td>SPARE</td><td>48</td></tr><tr><td>SPARE</td><td>49</td></tr><tr><td>SPARE</td><td>50</td></tr></table>	INTERNAL REFERENCE	X41 DC CKTS.	231/A2	1	231/A8	2	231/A8	3	231/A8	4	231/A9	5	231/A9	6	231/A9	7	231/A9	8	232/A2	9	232/A8	10	232/A8	11	232/A8	12	232/A9	13	232/A9	14	232/A9	15	232/A9	16	233/A2	17	233/A6	18	233/A7	19	233/A7	20	233/A8	21	233/A8	22	233/A8	23	233/A8	24	234/A2	25	234/A6	26	234/A7	27	234/A7	28	234/A8	29	234/A8	30	234/A8	31	234/A8	32	235/A2	33	235/A6	34	235/A7	35	235/A7	36	235/A8	37	235/A8	38	235/A8	39	235/A8	40	SPARE	41	SPARE	42	SPARE	43	SPARE	44	SPARE	45	SPARE	46	SPARE	47	SPARE	48	SPARE	49	SPARE	50	<table><tr><th>INTERNAL REFERENCE</th><th>X52 CONTROL & PROTN.</th></tr><tr><td>236/D1</td><td>1</td></tr><tr><td>236/D2</td><td>2</td></tr><tr><td>236/D3</td><td>3</td></tr><tr><td>236/D3</td><td>4</td></tr><tr><td>236/D4</td><td>5</td></tr><tr><td>236/D4</td><td>6</td></tr><tr><td>236/D5</td><td>7</td></tr><tr><td>236/D5</td><td>8</td></tr><tr><td>236/D6</td><td>9</td></tr><tr><td>236/D6</td><td>10</td></tr><tr><td>236/D7</td><td>11</td></tr><tr><td>236/D8</td><td>12</td></tr><tr><td>236/D8</td><td>13</td></tr><tr><td>236/D9</td><td>14</td></tr><tr><td>236/D9</td><td>15</td></tr><tr><td>236/D10</td><td>16</td></tr><tr><td>237/D2</td><td>17</td></tr><tr><td>237/D2</td><td>18</td></tr><tr><td>237/D3</td><td>19</td></tr><tr><td>237/D3</td><td>20</td></tr><tr><td>237/D4</td><td>21</td></tr><tr><td>237/D4</td><td>22</td></tr><tr><td>237/D5</td><td>23</td></tr><tr><td>237/D5</td><td>24</td></tr><tr><td>237/D6</td><td>25</td></tr><tr><td>237/D6</td><td>26</td></tr><tr><td>237/D7</td><td>27</td></tr><tr><td>237/D8</td><td>28</td></tr><tr><td>237/D8</td><td>29</td></tr><tr><td>237/D9</td><td>30</td></tr><tr><td>237/D9</td><td>31</td></tr><tr><td>237/D10</td><td>32</td></tr><tr><td>238/D2</td><td>33</td></tr><tr><td>238/D2</td><td>34</td></tr><tr><td>238/D3</td><td>35</td></tr><tr><td>238/D3</td><td>36</td></tr><tr><td>238/D4</td><td>37</td></tr><tr><td>238/D4</td><td>38</td></tr><tr><td>238/D5</td><td>39</td></tr><tr><td>238/D5</td><td>40</td></tr><tr><td>238/D6</td><td>41</td></tr><tr><td>238/D6</td><td>42</td></tr><tr><td>238/D7</td><td>43</td></tr><tr><td>238/D8</td><td>44</td></tr><tr><td>238/D8</td><td>45</td></tr><tr><td>238/D9</td><td>46</td></tr><tr><td>238/D9</td><td>47</td></tr><tr><td>238/D10</td><td>48</td></tr><tr><td>239/D2</td><td>49</td></tr><tr><td>239/D2</td><td>50</td></tr></table>	INTERNAL REFERENCE	X52 CONTROL & PROTN.	236/D1	1	236/D2	2	236/D3	3	236/D3	4	236/D4	5	236/D4	6	236/D5	7	236/D5	8	236/D6	9	236/D6	10	236/D7	11	236/D8	12	236/D8	13	236/D9	14	236/D9	15	236/D10	16	237/D2	17	237/D2	18	237/D3	19	237/D3	20	237/D4	21	237/D4	22	237/D5	23	237/D5	24	237/D6	25	237/D6	26	237/D7	27	237/D8	28	237/D8	29	237/D9	30	237/D9	31	237/D10	32	238/D2	33	238/D2	34	238/D3	35	238/D3	36	238/D4	37	238/D4	38	238/D5	39	238/D5	40	238/D6	41	238/D6	42	238/D7	43	238/D8	44	238/D8	45	238/D9	46	238/D9	47	238/D10	48	239/D2	49	239/D2	50	<table><tr><th>INTERNAL REFERENCE</th><th>X52 CONTROL & PROTN.</th></tr><tr><td>239/D3</td><td>51</td></tr><tr><td>239/D3</td><td>52</td></tr><tr><td>239/D4</td><td>53</td></tr><tr><td>239/D4</td><td>54</td></tr><tr><td>239/D5</td><td>55</td></tr><tr><td>239/D5</td><td>56</td></tr><tr><td>239/D6</td><td>57</td></tr><tr><td>239/D6</td><td>58</td></tr><tr><td>239/D7</td><td>59</td></tr><tr><td>239/D8</td><td>60</td></tr><tr><td>239/D8</td><td>61</td></tr><tr><td>239/D9</td><td>62</td></tr><tr><td>239/D9</td><td>63</td></tr><tr><td>239/D10</td><td>64</td></tr><tr><td>240/D2</td><td>65</td></tr><tr><td>240/D2</td><td>66</td></tr><tr><td>240/D3</td><td>67</td></tr><tr><td>240/D3</td><td>68</td></tr><tr><td>240/D4</td><td>69</td></tr><tr><td>240/D4</td><td>70</td></tr><tr><td>240/D5</td><td>71</td></tr><tr><td>240/D5</td><td>72</td></tr><tr><td>240/D6</td><td>73</td></tr><tr><td>240/D6</td><td>74</td></tr><tr><td>240/D7</td><td>75</td></tr><tr><td>240/D8</td><td>76</td></tr><tr><td>240/D8</td><td>77</td></tr><tr><td>240/D9</td><td>78</td></tr><tr><td>240/D9</td><td>79</td></tr><tr><td>240/D10</td><td>80</td></tr><tr><td>SPARE</td><td>81</td></tr><tr><td>SPARE</td><td>82</td></tr><tr><td>SPARE</td><td>83</td></tr><tr><td>SPARE</td><td>84</td></tr><tr><td>SPARE</td><td>85</td></tr><tr><td>SPARE</td><td>86</td></tr><tr><td>SPARE</td><td>87</td></tr><tr><td>SPARE</td><td>88</td></tr><tr><td>SPARE</td><td>89</td></tr><tr><td>SPARE</td><td>90</td></tr></table>	INTERNAL REFERENCE	X52 CONTROL & PROTN.	239/D3	51	239/D3	52	239/D4	53	239/D4	54	239/D5	55	239/D5	56	239/D6	57	239/D6	58	239/D7	59	239/D8	60	239/D8	61	239/D9	62	239/D9	63	239/D10	64	240/D2	65	240/D2	66	240/D3	67	240/D3	68	240/D4	69	240/D4	70	240/D5	71	240/D5	72	240/D6	73	240/D6	74	240/D7	75	240/D8	76	240/D8	77	240/D9	78	240/D9	79	240/D10	80	SPARE	81	SPARE	82	SPARE	83	SPARE	84	SPARE	85	SPARE	86	SPARE	87	SPARE	88	SPARE	89	SPARE	90
INTERNAL REFERENCE	X3 AC CKT.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
211/A3	1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
211/B3	2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
211/A3	3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
211/B3	4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
211/B3	5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
211/C3	6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
211/B3	7																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
211/C3	8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
INTERNAL REFERENCE	X51 CONTROL & PROTN.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
231/D1	1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
231/D2	2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
231/D3	3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
231/D4	4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
231/D4	5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
231/D5	6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
231/D5	7																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
231/D5	8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
231/D6	9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
231/D6	10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
231/D7	11																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
231/D8	12																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
231/D8	13																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
231/D9	14																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
231/D9	15																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
231/D10	16																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
232/D2	17																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
232/D2	18																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
232/D3	19																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
232/D3	20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
232/D4	21																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
232/D4	22																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
232/D5	23																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
232/D5	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
232/D6	25																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
232/D6	26																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
232/D7	27																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
232/D8	28																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
232/D8	29																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
232/D9	30																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
232/D9	31																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
232/D10	32																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
233/D2	33																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
233/D2	34																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
233/D3	35																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
233/D3	36																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
233/D4	37																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
233/D4	38																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
233/D5	39																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
233/D5	40																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
233/D6	41																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
233/D6	42																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
233/D7	43																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
233/D8	44																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
233/D8	45																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
233/D9	46																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
233/D9	47																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
233/D10	48																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
234/D2	49																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
234/D2	50																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
INTERNAL REFERENCE	X51 CONTROL & PROTN.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
234/D3	51																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
234/D3	52																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
234/D4	53																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
234/D4	54																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
234/D5	55																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
234/D5	56																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
234/D6	57																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
234/D6	58																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
234/D7	59																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
234/D8	60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
234/D8	61																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
234/D9	62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
234/D9	63																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
234/D10	64																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
235/D2	65																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
235/D2	66																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
235/D3	67																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
235/D3	68																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
235/D4	69																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
235/D4	70																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
235/D5	71																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
235/D5	72																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
235/D6	73																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
235/D6	74																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
235/D7	75																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
235/D8	76																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
235/D8	77																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
235/D9	78																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
235/D9	79																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
235/D10	80																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	81																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	82																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	83																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	84																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	85																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	86																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	87																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	88																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	89																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	90																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
INTERNAL REFERENCE	X41 DC CKTS.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
231/A2	1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
231/A8	2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
231/A8	3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
231/A8	4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
231/A9	5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
231/A9	6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
231/A9	7																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
231/A9	8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
232/A2	9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
232/A8	10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
232/A8	11																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
232/A8	12																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
232/A9	13																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
232/A9	14																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
232/A9	15																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
232/A9	16																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
233/A2	17																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
233/A6	18																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
233/A7	19																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
233/A7	20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
233/A8	21																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
233/A8	22																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
233/A8	23																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
233/A8	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
234/A2	25																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
234/A6	26																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
234/A7	27																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
234/A7	28																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
234/A8	29																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
234/A8	30																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
234/A8	31																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
234/A8	32																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
235/A2	33																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
235/A6	34																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
235/A7	35																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
235/A7	36																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
235/A8	37																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
235/A8	38																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
235/A8	39																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
235/A8	40																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	41																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	42																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	43																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	44																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	45																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	46																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	47																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	48																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	49																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	50																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
INTERNAL REFERENCE	X52 CONTROL & PROTN.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
236/D1	1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
236/D2	2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
236/D3	3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
236/D3	4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
236/D4	5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
236/D4	6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
236/D5	7																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
236/D5	8																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
236/D6	9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
236/D6	10																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
236/D7	11																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
236/D8	12																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
236/D8	13																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
236/D9	14																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
236/D9	15																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
236/D10	16																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
237/D2	17																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
237/D2	18																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
237/D3	19																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
237/D3	20																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
237/D4	21																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
237/D4	22																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
237/D5	23																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
237/D5	24																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
237/D6	25																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
237/D6	26																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
237/D7	27																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
237/D8	28																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
237/D8	29																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
237/D9	30																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
237/D9	31																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
237/D10	32																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
238/D2	33																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
238/D2	34																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
238/D3	35																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
238/D3	36																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
238/D4	37																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
238/D4	38																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
238/D5	39																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
238/D5	40																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
238/D6	41																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
238/D6	42																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
238/D7	43																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
238/D8	44																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
238/D8	45																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
238/D9	46																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
238/D9	47																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
238/D10	48																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
239/D2	49																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
239/D2	50																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
INTERNAL REFERENCE	X52 CONTROL & PROTN.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
239/D3	51																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
239/D3	52																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
239/D4	53																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
239/D4	54																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
239/D5	55																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
239/D5	56																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
239/D6	57																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
239/D6	58																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
239/D7	59																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
239/D8	60																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
239/D8	61																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
239/D9	62																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
239/D9	63																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
239/D10	64																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
240/D2	65																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
240/D2	66																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
240/D3	67																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
240/D3	68																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
240/D4	69																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
240/D4	70																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
240/D5	71																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
240/D5	72																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
240/D6	73																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
240/D6	74																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
240/D7	75																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
240/D8	76																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
240/D8	77																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
240/D9	78																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
240/D9	79																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
240/D10	80																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	81																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	82																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	83																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	84																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	85																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	86																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	87																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	88																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	89																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
SPARE	90																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
B																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
C																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
D																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
E																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
F																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
G	AS-BUILT BY _____ DATE _____		CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		TERMINAL BLOCK REFERENCE		<div>الشركة الوطنية لنقل الكهرباء</div> <div>National Grid sa</div>																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
			DRAWN BY RIZ CHECKED BY JKR				SAS INTERFACE PANEL +SAS I/F-1		INDEX PLANT NO. DRAWING NUMBER SHEET NO. REV. NO.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
			DATE STARTED 15.3.2013 DATE COMPLETED _____				S/S 8709 S-13656		P C421 CD-322986 301 302 00																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
	00	13 20	FOR APPROVAL				RIYADH SAUDI ARABIA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
	REV. NO.	DATE	DESCRIPTION		OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													

1		2		3		4		5		6		7		8		9		10						
A	INTERNAL REFERENCE		X42 DC CKTS.		INTERNAL REFERENCE		X53 CONTROL & PROTN.		INTERNAL REFERENCE		X53 CONTROL & PROTN.		INTERNAL REFERENCE		X43 DC CKTS.		INTERNAL REFERENCE		X4 DC CKTS.		REFERENCE		X61 ALM. CKT.	
	236/A2	1	2	1	241/D1	1	2	1	244/D3	51	52	51	241/A2	1	2	1	216/B3	1	2	1	212/E5	1	2	1
B	236/A8	2	3	2	241/D2	2	3	2	244/D3	52	53	52	241/A8	2	3	2	216/B3	2	3	2	212/E5	2	3	2
	236/A8	3	4	3	241/D3	3	4	3	244/D4	53	54	53	241/A8	3	4	3	SPARE	3	4	3	290/E5	3	4	3
	236/A8	4	5	4	241/D3	4	5	4	244/D4	54	55	54	241/A8	4	5	4	SPARE	4	5	4	290/E6	4	5	4
	236/A9	5	6	5	241/D4	5	6	5	244/D5	55	56	55	241/A9	5	6	5	SPARE	5	6	5	SPARE	5	6	5
	236/A9	6	7	6	241/D4	6	7	6	244/D5	56	57	56	241/A9	6	7	6	SPARE	6	7	6	SPARE	6	7	6
	236/A9	7	8	7	241/D5	7	8	7	244/D6	57	58	57	241/A9	7	8	7	SPARE	7	8	7	SPARE	7	8	7
	236/A9	8	9	8	241/D5	8	9	8	244/D6	58	59	58	241/A9	8	9	8	SPARE	8	9	8	SPARE	8	9	8
	237/A2	9	10	9	241/D6	9	10	9	244/D7	59	60	59	242/A2	9	10	9	SPARE	9	10	9	SPARE	9	10	9
	237/A8	10	11	10	241/D6	10	11	10	244/D8	60	61	60	242/A8	10	11	10	SPARE	10	11	10	SPARE	10	11	10
	237/A8	11	12	11	241/D7	11	12	11	244/D8	61	62	61	242/A8	11	12	11	SPARE	11	12	11	SPARE	11	12	11
C	237/A8	12	13	12	241/D8	12	13	12	244/D9	62	63	62	242/A8	12	13	12	REFERENCE	1	2	1	REFERENCE	1	2	1
	237/A9	13	14	13	241/D8	13	14	13	244/D9	63	64	63	242/A9	13	14	13	212/C5	2	3	2	212/C5	2	3	2
	237/A9	14	15	14	241/D9	14	15	14	244/D10	64	65	64	242/A9	14	15	14	290//E5	3	4	3	SPARE	3	4	3
	237/A9	15	16	15	241/D9	15	16	15	SPARE	65	66	65	242/A9	15	16	15	INTERNAL REFERENCE	1	2	1	INTERNAL REFERENCE	1	2	1
	237/A9	16	17	16	241/D10	16	17	16	SPARE	66	67	66	243/A2	16	17	16	211/E7	2	3	2	211/F7	2	3	2
	238/A2	17	18	17	242/D2	17	18	17	SPARE	67	68	67	243/A6	17	18	17	SPARE	3	4	3	SPARE	3	4	3
	238/A6	18	19	18	242/D2	18	19	18	SPARE	68	69	68	243/A7	18	19	18	XTJ SPACE HEATER	1	2	1	XTJ T.JACK	1	2	1
	238/A7	19	20	19	242/D3	19	20	19	SPARE	69	70	69	243/A7	19	20	19	211/D3	2	3	2	211/D3	2	3	2
	238/A7	20	21	20	242/D3	20	21	20	SPARE	70	71	70	243/A8	20	21	20	211/D3	3	4	3	211/D3	3	4	3
	238/A8	21	22	21	242/D4	21	22	21	SPARE	71	72	71	243/A8	21	22	21	SPARE	4	5	4	SPARE	4	5	4
D	238/A8	22	23	22	242/D4	22	23	22	SPARE	72														